THE BUILDER

A Journal for the Architect & Constructor

FEB. 24, 1928 — No. 4438

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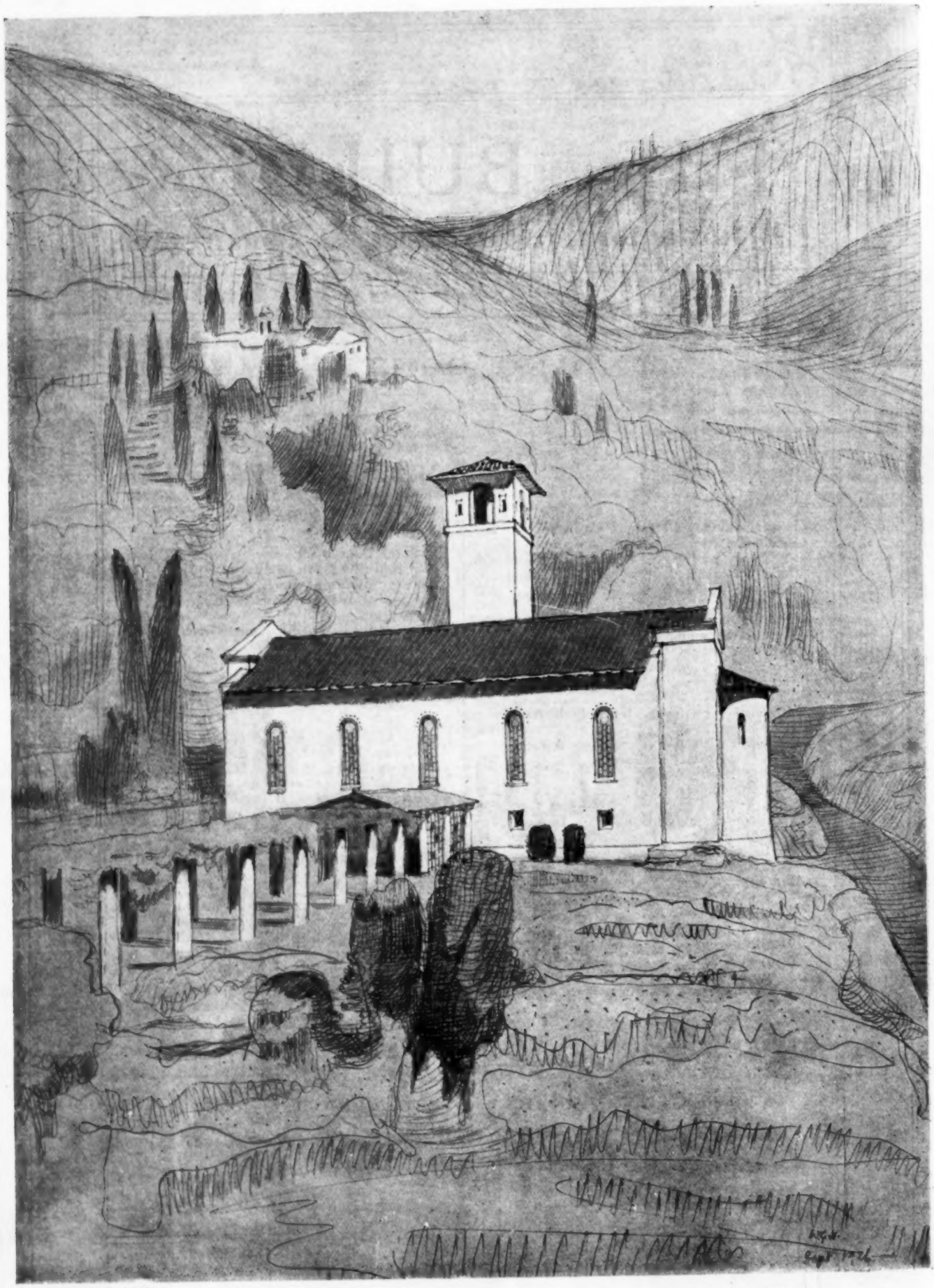
86TH YEAR



R.A. Exhibition, 1927.

Church at Alassio: Perspective Sketch.

Messrs. William G. Newton and Partners, Architects.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4438. FEBRUARY 24, 1928.

NOT AN ANTI-CLIMAX

WE met a young architect recently who professed to see something Gilbertian about the present position as regards Registration, and in the recent letter to members of the Institute from the President, as an attempt to disguise an anti-climax as a triumph. If we saw in him no more than an isolated subject of a perverted humour, we could afford to ignore him; but believing him to represent quite a number who are cloaking with a laugh their deep disappointment at what they regard the end of their hopes, we consider it will serve a useful purpose if we review the position a little more closely now that the second reading of the Architects' Registration Bill has been fixed for March 2; for we believe there is no question closely affecting the world of building more generally misunderstood than this question of the Registration of Architects. It is, in fact, our hope that the Bill now before Parliament will shortly be placed upon the Statute Book and become part of the law of the land.

A number of people have looked upon registration as the great and final solution of the architect's problems of life and practice. To make the architectural profession a closed one, on the lines of the medical profession, must appeal to a large extent to those who regard the question of sound building as a matter of importance little short of, and largely interwoven with, the question of public health. To aim at a state in which only those who have been through the necessary training, and who have passed strict tests as to efficiency, shall be permitted to direct the processes of building, is not an unworthy one, though without doubt largely Utopian; and there are doubtless many who hoped, if not expected, that this state would arrive with the passing of a Registration Act. We must confess that we have never anticipated anything of the sort, nor for that matter have we desired it, though we have consistently given our support and sympathy to the Institute in its campaign for the fuller recognition of the qualifications of an architect, as expressed by its registration policy.

There are still more who, recognising that the foregoing is impossible, and trusting in enlightenment to bring about a similar effect in a natural way, have yet hoped that the name of the profession might become protected by law. The name of "architect" is used by many who have no more title to it than has a gasometer to the name of "architecture." These, they believe, should be prevented by law from prostituting the title, and so assist public discrimination. It is impossible entirely to withhold sympathy from such a viewpoint, and it is not an untenable attitude to assume that in the absence of such protection the whole essence of the movement is lost. We believe, however, that if those who have permitted themselves to subside into this slough of despond will exert themselves to review the facts afresh much misunderstanding will be dispelled, for misunderstanding is more often the rock upon which broad principles of policy become split, than any real difference of opinion. If we were to criticise at all the conduct of the registration campaign, it would be upon the point as to whether the promoters have ever sufficiently explained their aims to those who are really anxious to understand them. But even in this, we believe it is better for members of the profession to think things out for themselves than be spoon-fed with ready-made conclusions.

Some time ago, when a detailed criticism of the terms of the Bill seemed to be out of place, and the reverse of helpful, we discussed, under the title of "One Good Thing at Least," the fine spirit that had been engendered in the profession by the united front it had assumed on a scale unique in its history. We still cherish the fact, and we should be dismayed at any prospect which might threaten its maintenance. If it is to be maintained, however, architects must face the fact that they have *committed themselves* to a policy with something approaching unanimity. Any who failed to be present and vote against this policy when the opportunity was given them have no right now to turn back because the execution of that policy differs in detail from that they had anticipated. The Committee they entrusted with the task of presenting the case for the Bill as framed have been faced with a tremendous problem. They have had to choose between the alternatives of bending or breaking. It becomes obvious that those who declare that in bending to opposition on points of detail nothing of any value has been achieved must be prepared to say that they are willing for the whole movement to die a natural death. Have these considered the effect upon professional status which a defeat of the measure would bring? We venture to state that in the eye of the public the refusal of their representatives to admit the claim of architects to the major control of building would read as a vote of no confidence in the profession, and that the status thereof would be worse than before, and probably worse than it has ever been. Are opponents of the amended Bill content to bring this state of affairs about? If not, what alternative proposals have they to make? Destructive criticism is always so easy to make, and so futile; but to make a really constructive move is the work of a statesman, and we believe that those who have had the care of this Bill have endeavoured to act in accordance with the highest traditions of statesmanship, and have come at least very near the goal at which they have been aiming. Is this not a very substantial achievement?

The question as to whether the protected title of the practitioner becomes "registered architect" or simply "architect" becomes a matter of less importance in comparison with such a vast issue as this, and we believe there are a good many now in doubt who will come to regard the matter in a true perspective before it is too late. We would therefore urge all members of the profession to do all in their power to bring about the fullest benefits which remain available to them.

The history of the Registration movement is filled with pages of strife and discord, in which the great schism which created the Society of Architects stands out as a tragic episode. For many years the regulated conduct of the profession was divided between two parallel institutions, and few would claim that anything but harm resulted while such a state of affairs maintained. In more recent years the two bodies converged towards cordial co-operation, culminating in the recent amalgamation. There are again fewer who would regret this outcome. Let them, however, make sure that they hold what has been gained, and that they do not head once more towards a disruption that would be more final than any they have yet suffered. Let them above all be loyal to the men who have given their time and energies to the good of the profession, and whom they have authorised to guard their interests and improve their status.

This journal is read widely by others than architects and in whose interests we are as deeply concerned as in those of the latter. If we should appear to devote a disproportionate attention to the purely domestic interests of one class of reader, it is because we believe that the health of building in general depends, in no small measure, on the united vigour of the architectural profession. The Registration Bill stands, then, for a united profession, first and foremost, and in the second place for one protected to an extent never before experienced. "Good luck to its promoters, and to the profession now at the start of a fresh chapter in its history" is our sincere wish.

NOTES

Stone Preservation and Decay.

PROFESSOR LAURIE'S paper on "Stone Preservation and Decay," read before the R.I.B.A. on Monday evening last, was one of uncommon interest and deserves the close attention of architects, builders, building owners and all others who are affected by this very serious problem. Though the lecturer was unable to announce the discovery of any permanent preservative of stone, he was at least able to indicate a variety of methods of arresting decay, the simplest and most economical in the case of limestones being the periodical hosing down of wall surfaces during warm weather. This, it was stated, has been done for some time past in the case of the Goldsmiths' Hall in the City with extraordinary success. As the lecturer was able to show, much of the decay in buildings is due to unsuitable design; where limestones are used in such a climate as that of London, for instance, it seems to be necessary to keep surfaces as flat as possible and to avoid projecting features where moisture may linger, if we wish to preserve our buildings as long as possible from dissolution.

A Point in Geology.

PROFESSOR LAURIE gave one extraordinary instance of stone decay to show the desirability of taking expert advice before deciding upon a given stone for a building. A certain stone was selected for an important new building from two quarries about a mile apart. In appearance the stones were exactly alike. They were duly embodied in the building, and then it was noticed that while some stones stood up to the weather quite satisfactorily, others weathered very badly, and produced a most unsightly effect. The explanation was that, although the stones looked exactly alike and came from quarries only a mile apart, geologically they were separated by millions of years.

Repointing and Decay.

ONE very interesting discovery of Professor Laurie is that decay is often produced or accelerated by repointing. He mentioned the case of a brick building which had stood for centuries but which rapidly decayed when repointed with a mixture of cement and lime. On this question investigations are still proceeding, and the lecturer gave some indication of a possible solution when he said that some means should be sought of causing the crystallisation of the salts to take place in the mortar and not in the stone. It was interesting to hear that after all our experiments with building materials the most suitable for London, from the point of view of durability, is the London stock brick.

Minimum Salaries.

FROM the report of the meeting of the Association of Architects, Surveyors and Technical Assistants held to consider the question of minimum salaries (given on page 340), it will be seen that, having failed in their negotiations with the Council of the R.I.B.A. to get a recognised minimum, the meeting gave the Executive of the Association power to take advantage of the by-laws of the Institute under which the Institute is compelled to call a special meeting if requested to do so by twenty of its members. Presumably twenty members of the Association, who are also members of the Institute, will call such a meeting. A significant observation of one speaker, it will be noted, was that unless the Registration Bill contained a clause fixing minimum wages for assistants the Labour Party could not support it in Parliament.

Proposed Memorial to Lord Haig.

IT is proposed to erect, say, 500 cottages for ex-soldiers all over the country (at £600 a-piece) in memory of Lord Haig, but the "official report" says it would be a "good idea" to induce some eminent architect to give a plan to be repeated and so ensure a good scheme. That is not a "bad idea," but to repeat a house all over the land regardless of local materials and differing sites would be recklessly short-sighted and bad. And why limit the plan to one individual? and one plan notion seems questionable.

Skill in Workmanship.

THE Duke and Duchess of York visited the British Industries Fair at the White City, Shepherd's Bush, on the occasion of the opening on Monday, and in the evening the Duke attended the Government dinner held at the Mansion House to mark the opening of the Fair. In proposing the toast of "The British Industries Fair," he referred to the good omens of more prosperous times, and in speaking of the quality of the goods displayed at the Fair, he said: "Nobody can but admire the extraordinary skill and efficient workmanship put by the men and women into the vast mass of production which is poured out of our mills and factories. I am sure that the directors of the hundreds of firms represented at London and Birmingham would be the first to agree that, however perfect the factory organisation, the financial direction, and the sales machinery of a manufacturing business, good results are impossible without the conscientious skill of their workmen and workwomen. I am therefore specially pleased to hear that many of the exhibitors at the Fair invite parties of their employees to visit the section in which they are showing, and I venture to hope that this practice may become even more general." The hope was expressed by subsequent speakers that the Government would be induced to erect a building worthy of the Fair. This is an excellent suggestion, and seeing that the Government has already shown its appreciation of the importance of the Fair by giving it financial support, there is some ground for hoping that the *i*dea may be seriously considered.

House in Church Street, Chelsea: Garden Front.
The late MR. HALSEY RICARDO, F.R.I.B.A., Architect.

A Tripod.
From a sketch by C. R. COCKERELL.

A Dutch Painter. PICTURES of glowing colour in and about Tangier are on view at Mr. W. B. Paterson's gallery in Bond-street from the hand of Dick Jansen, a Dutch artist, who was born in Tangier. The realisation of the colour and the broad characteristics of Moorish architecture is striking, and the artist has certainly produced some remarkably rich effects, as in the Gate of Medersa, Morocco (29) and the Gate in Morocco (11). This artist gives a general impression of truthfulness, but there is no real drawing of architecture in his pictures. An innovation of the usual framing method is to be seen in these decorated frames which were all made in Tangier; in some cases the decorative colour on the frames is a distinct advantage, but on others the result is doubtful.

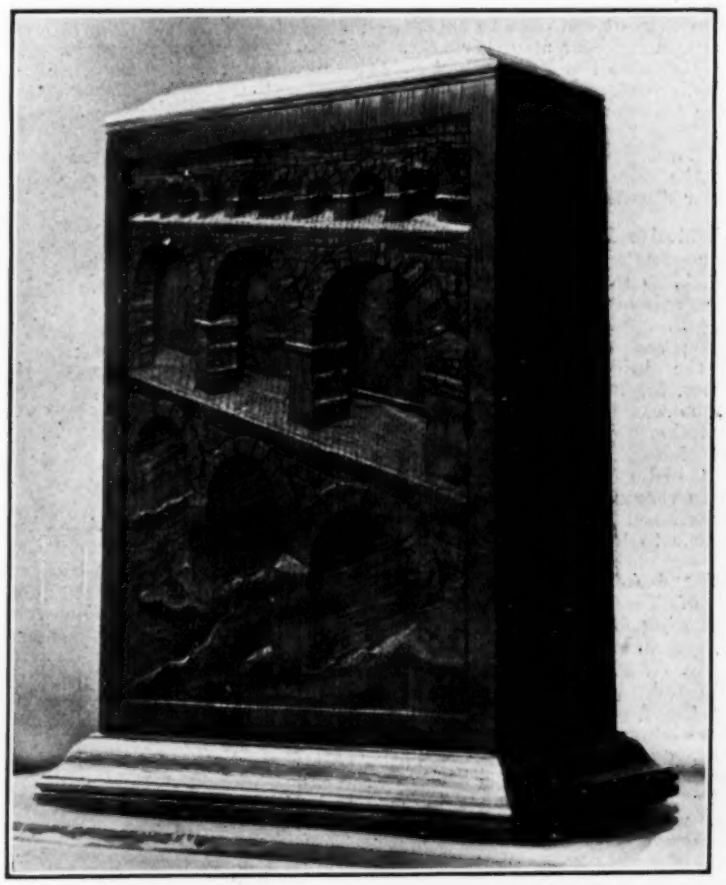
The Beaux Arts Galleries. IT would seem difficult to find a reason for the pictures and drawings now on view at the Beaux Arts Galleries. The Exhibits by M. Fabian Ware indicate a knowledge of form and colour and a sense of decorative values, but the work by the Seven and Five cannot be said to inspire or elevate: what they were produced for perhaps the public may find out! Having seen so many of the finest pictures in the world, we are not in a state to absorb any value from these works.

The Society of Women Artists. THE women artists have an interesting show at the Institute in Piccadilly, and though the days of artists, like the Misses Montalba, seem to have passed away for the time, we are always hoping that women artists will add to our artistic pleasures in the realm of picture making of first-rate quality, such as they should be able to attain. The best part of the exhibition is the Craft section, in which is to be found some admirable work in fabrics and pottery. A pleasing little water-colour, which is delicately and well drawn, is the "Dutch Gables," 11, by Evelyn J. Rimington. A clever mosaic of colour is "Verenna," 285, by C. Billing. Some able pastel technique is seen in "Marjorie Raphael," 192, by May C. B. Ward. The "Mantua," 318, by Lota Bowen, is an admirable low-toned landscape painted with breadth of dignity. There is a rare feeling in the "Sea Mists Rising," by Emily Count. The "Bathing Cove," by Dorothea Sharp is a telling and vigorous piece of colour, and the "Cold Day at Dieppe," 213, by Lucy Revil, has a nice quality. There are comparatively few pictures which have any distinction, and we fear the motive for once is somewhat at fault.

A Masonic Lodge Charity Box. A RATHER interesting and unusual piece of work is the Masonic Lodge Charity Box which we illustrate. It is formed from a solid block of oak, the hinged lid and moulded base being applied later, and has been carved in low relief on the front panel by Mr. James Walker to show part of the famous Pont du Gard at Nimes, an aqueduct dating from the Augustan era. This particular aqueduct forms the emblem of the "Marcus Vitruvius" Lodge No. 4985. The name of the lodge itself has an interest inasmuch as it has recently been formed from among the members of the very old "Vitruvian" Lodge, named after Marcus Vitruvius Pollio, the ancient Roman writer on architecture, whose name is more commonly known as "Vitruvius," and whose work included the designing of aqueducts. This factor led to the adoption of the Pont du Gard as the appropriate emblem of the new lodge.

Birmingham's Advisory Art Committee. DURING the past year ending December 31, 1927, this energetic and useful Committee has reported on some twenty-one submissions and fifteen visits have been paid to sites for proposed buildings. The committee places on record its recognition of the cordial co-operation of the City Departments during the year.

A Timber Exhibition. OUR readers should not overlook the interesting Timber Exhibition in the Imperial Galleries at South Kensington, which is near the Prix de Rome exhibition. The beauty of colour, tone, figure and texture in the great variety of woods shown is enough to set the architect longing to find suitable means for using them.



A Masonic Lodge Charity Box.

GENERAL NEWS

Professional Announcement.

Mr. L. A. Culliford, F.R.I.B.A., F.S.I., and Mr. J. Eustace Salisbury, A.R.I.B.A., entered into partnership on January 1 last, under the name of Salisbury and Culliford, with offices at 3, John-street, Bedford-row, W.C.2, where Mr. Culliford has been practising for some time.

Institute of Transport : Annual Dinner.

The eighth dinner of the Institute of Transport will take place at 7 for 7.30 p.m. on Wednesday, March 21, at the Hotel Cecil.

The Devil's Dyke.

By practically a unanimous vote, the Brighton Town Council has agreed to purchace the Devil's Dyke estate of 190 acres, the purchase price of which is £9,000.

A Surveyor's Estate.

Mr. Charles Edward Cæsar, Worthing, and Tooley-street, S.E., auctioneer and surveyor, who died in October last, left estate of the gross value of £10,354, with net personalty £6,131

Darlington Waterworks Extension.

We learn that the Town Council is to carry out waterworks improvements at Harrowgate Hill, at an estimated cost of £30,000.

St. Helier Harbour.

Plans have been adopted by the States of Jersey for the improvement of St. Helier harbour to meet the requirements of the larger mail steamers of the Southern and Great Western Railways. The scheme includes reconstructing the Victoria pierhead with foundations on rock; to construct a berth 450 ft. long at Victoria pier with a depth of 10 ft. at low water, etc. The estimated cost of the work is £250,000, and engineers estimate that the time necessary for the completion of the scheme is three years from the date of the contract.

Rent Restriction Acts.

Sir Kingsley Wood, on behalf of the Minister of Health, in reply to a deputation from the Trades Union Congress General Council on this subject, has stated that the policy of the Government has been to extend the Rent Restriction Acts for a further year, at the end of which time the position will be reviewed by Parliament. Sir Kingsley made it clear that the Government realise the importance of building houses at rents within the capacity of lower-paid wage-earners, and intimated that the slum problem is now receiving particular attention.

Waterloo Bridge.

Replying to a question at Tuesday's meeting of the L.C.C., as to the Council's power to rebuild the existing bridge forthwith, without having to apply for special Parliamentary powers; and whether the Council could rebuild the bridge with a smaller number of arches, Sir Percy Simmons replied that so far as he was aware the question of rebuilding Waterloo Bridge was not before the Committee of Experts. The Council was advised that it had sufficient powers under existing Acts to rebuild the bridge. In the contingency mentioned Parliamentary powers would not appear to be required.

Monumental and Architectural Granite.

The Board of Trade have appointed a committee consisting of Sir Harold Snagge, K.B.E., J.P. (chairman), Mr. H. C. B. Mynors, and Mr. W. F. Purdy, O.B.E., J.P., to inquire into and report upon an application made by the Aberdeen Granite Manufacturers' Association, on behalf of the whole industry, under the Safeguarding of Industries procedure, for the imposition of an import duty on monumental and architectural granite, wholly or mainly manufactured. The secretary to the committee is Mr. H. W. Griffin, Board of Trade, Great George-street, London, S.W.1, to whom all communications relating to the work of the committee should be addressed.

OBITUARY

Halsey Ralph Ricardo, F.R.I.B.A.

We deeply regret to record the death of Mr. Halsey Ricardo, who was born at Bath in 1854. His family came originally from Portugal. His father was educated as an architect, but gave it up owing to family interests and took to banking, and settled at Bath. The father was a nephew of David Ricardo, the economist, famous for his theory of rent.

One who knew Mr. Ricardo well writes :—

"Both parents died young when Halsey Ricardo was a boy. He was then brought up in the house of his aunt, the wife of the Rector of Dumbleton, in Gloucestershire. He was educated at Rugby. When he was there, Butterfield was building the new chapel. The work impressed Halsey Ricardo enormously, and he was ever afterwards a staunch admirer of Butterfield's works. Probably Butterfield's use of coloured materials had a strong influence on him, and may have been responsible for his own much more daring and successful experiments in that line.

"When Ricardo left school he was articled to an architect in Cheltenham. He worked for a time under Mr. Basil Champneys, who was then doing the schools at Cambridge. He found him inspiring and sympathetic. After he left his office he went abroad, and was for a year or more in Italy. He came under the thrall of both country and people, of their life and art, and he suffered afterwards from a nostalgia for Italy. He married in 1881, not long after his return to England.

"He was one of the first to use glazed materials, certainly the first to use them successfully. An early example of work in this kind was offices in Great George-street, Westminster, built in 1887, mainly of salt-glazed bricks, unfortunately destroyed lately. He came early under the influence of Philip Webb, and was one of those who reacted most successfully against the too picturesque influence of Norman Shaw. Though his mind was in the best sense of the word that of a scholar, his work could never be said to be scholarly or academic. It was always original, and the design grew from the necessity of the conditions. He had a real enthusiasm for construction, and delighted in designing and setting out elaborate vaults.

"In 1888 he went into partnership with William de Morgan, the potter, and worked with him for ten years. All the tiles and vases with designs in relief are by Ricardo. The Arts and Crafts started in 1888, and he and de Morgan exhibited a chimneypiece designed by Ricardo and carried out in glazed tiles and bricks. The next year he joined the Arts and Crafts and became a frequent exhibitor, showing, among other things, tiled panels, sometimes carved in relief by himself. He went on the committee in 1893, and remained on until his death. He taught architecture at the Central Schools from their start in the middle 'nineties. His teaching was very inspiring and had great influence on many of the younger men. After Professor Lethaby, it was suggested that Ricardo should be in charge of the Central Schools, but he was not willing to give up all his time to the work, so the proposal fell through. As time went on Ricardo found the conditions very irksome, and he eventually gave up teaching there about 1910

"Among his works are two houses in Melbury-road in salt-glazed bricks, built in 1893. He made an excellent competition design for Oxford Municipal building about 1894. It was quiet and dignified with a flat roof, and a continuous row of great mullioned windows along the upper floor. Towards the end of the 'nineties he built the Howrah Station, Calcutta, his one big public building. In 1901 he designed Government offices for Johannesburg, but they were not executed. In 1905 he built the well-known house in Addison-road, and in the same year his own country house at Graffham, Sussex. Other notable London buildings are: Nurses' hostel near Endell-street; a house in Church-street, Chelsea, built in 1914. Since the war he designed cottages for the Government housing scheme for East Sussex, but after various delays, the whole scheme was quashed by the Government. He quite recently designed a new wing for Leighton House, Kensington, the work of which is just about to commence. He also recently designed considerable country houses for a site in Wisborough.

"He had unbounded energy, enthusiasm and optimism," writes his son-in-law, Mr. C. Maresco Pearce, the artist. "He never, as far as I know, had an office in the usual sense—that is, that he always, or almost always, did every scrap of his own work—not only designed the whole in every detail, but made every working drawing and even tracing, and wrote every specification, and, of course, personally supervised all the building. Another point which seems to me of interest is that, at all events latterly (I cannot be certain that it was always his method), when he was designing he proceeded at once to make working drawings. I once asked him why he did this instead of designing with rough sketches. He replied that this was the only way he could design; in other words, he formed the original concept in his mind (and I believe this to have been exceedingly vivid) and then proceeded to work this out in detailed drawings, which were the actual working drawings. If alterations had to be made, he would start all over again from the beginning. All of which shows, I think, that his design was unusually dependant on the actual structural necessities. I think it also accounts for a certain vitality in his finished work. But vitality, exuberance and optimism were among the most noticeable of his characteristics. He had a wide and most scholarly intellect and an extraordinarily retentive memory—all of which made him an unusually delightful companion."

Lewis Solomon, F.R.I.B.A.

We regret to announce the death, on February 15, as the result of an accident, of Mr. Lewis Solomon, F.R.I.B.A. Mr. Solomon, who was awarded the R.I.B.A. Donaldson Silver Medal in 1865-6, was elected Associate of the R.I.B.A. in 1871 and Fellow in 1883. He took a large part in the activities of the R.I.B.A., on whose Council he sat (1904-5). He was interested particularly in matters of architectural education, on which Board he sat from 1910 to 1921, being vice-chairman from 1911-1916 and from 1919-1920. He was a member of the Board of Examiners from 1887 almost uninterruptedly until 1923, being vice-chairman from 1907-1910. He was chairman of the Science Standing Committee from 1903-8, on which committee he served altogether from 1895-1910. In addition he was a member of the Practice Standing Committee from 1901-2.

COMPETITIONS OPEN.

Extensions to the Town Hall and Municipal Buildings, Accrington. Mr. Herbert J. Rowse, A.R.I.B.A., assessor	Particulars published in "Builder." Sept. 16	Sending in date. —
Senior School, Birkdale, Southport. Professor S. D. Adshead, Assessor. Premiums of £100, £75 and £50. Apply to Director of Education, Municipal Buildings, Southport. Deposit of 10s. 6d. required.	Aug. 12 & Nov. 18	1928 Mar. 10
Municipal College of Technology, Manchester, extension. Messrs. Alan E. Munby, H. M. Fletcher and Francis Jones, assessors. Premiums of £500, £400 and £300. Apply Mr. P. M. Heath, Town Clerk. Deposit £1 1s. required	Nov. 4	Mar. 3
School at Rickmansworth to accommodate 400 senior girls, for the governors of Royal Masonic Institution for Girls. Premiums : £750, £500, £400, £300 and £200. Mr. H. V. Ashley, F.R.I.B.A., Assessor. Apply, Mr. M. Beachcroft, 31, Great Queen-street, W.C.2. Deposit, £2 2s.	1927. Dec. 9	1928 Sept. 5
Town Hall, Shops and Offices, Lewisham, for the Lewisham B.C. Premiums of £350, £250 and £150 are offered. Mr. Winton Newman, F.R.I.B.A., assessor. Conditions of competition may be applied for after March 1 to Mr. John Shuter, Town Clerk, Town Hall, Catford, S.E.6. Deposit, £2 2s.....	1928 Feb. 3 & 17	—

PRESERVATION OF ST. PAUL'S CATHEDRAL

SIR,—I agree with Mr. Harvey that the position of the inner drum relative to the inner face of the piers is "vitally important" in forming an opinion whether St. Paul's is in a dangerous condition or not. To enable your readers to satisfy themselves on this point. I illustrated comparative diagrams of the building as it is, and as Mr. Harvey apparently believes it to be.

Whatever Mr. Harvey may think of my diagrams, I am confident that the rest of your readers will have no difficulty in understanding the construction from diagram B, Figure 3, section through the piers, and Figure 4, plan at top of pendentive and the section Figure 7 and superimposed plan Figure 8, with the dimensions given on them and on the plan of drums at level of seat of Whispering Gallery. It is obvious from these plans that the inner drum does not stand out over the void as Mr. Harvey claims, and the dimensions, which Mr. Harvey has not attempted to dispute, prove conclusively what he meant by the word "several," for by them the actual number of feet can be found, as I have shown in my previous letters. Also he has not refuted my dimensions, nor put forward any different figures.

Space does not admit of replying categorically to all the side issues he advances in his attempts to avoid producing evidence on the vital questions on his scheme and theories, and the construction and condition of St. Paul's.

He claims that the preservation work must be carried out as a sound and comprehensive scheme after exhaustive survey and analysis of the building. With this I also agree. The comprehensive scheme for the preservation work was drawn up by Messrs. W. D. Caröe and Mervyn Macartney in March, 1914, after a detailed examination of the Cathedral, and was approved by the Dean and Chapter, and a considerable amount of work has been carried out. During progress, as parts of the building became more accessible, and the examination survey and analysis of the building was being made, more extensive work was found necessary than was first described. The work now in hand is the direct outcome and continuation of the general scheme.

The governing principle has been and is to preserve St. Paul's as designed by Sir Christopher Wren, with a minimum of interference with the existing structure, with only such additional weight or material as will provide efficient repair, and which will stabilise the building in the position and shape to which it has adjusted itself, taking advantage of its natural strength, and assisting in those directions in which, owing to initial settlement, defective materials or workmanship, some weakness has developed. Apparently Mr. Harvey agrees with the principles, but objects to the practice.

Alternative proposals for rebuilding the piers have for the most part been confined to criticism of one detail of the work comprised in the scheme, and arise from differences of opinion as to the incidence, disposition and amount of the load from the superstructure on to the piers, and the relative strength of the piers themselves to support it.

The "alarmist" alternative proposal starts from an entirely different basis and point of view. It originated in a panic in January, 1925, following the service of the dangerous structures notice by Mr. Todd on Christmas Eve, 1924. Up to that time the differences of opinion with regard to St. Paul's, apart from the question of the strength of the piers or foundations, were mainly on minor points of architectural and artistic treatment or æsthetic principles. As regards the structure, all were agreed that St. Paul's Cathedral was one of the finest examples of a permanent monumental building designed "to produce enduring strength with scientific economy of material," which features were "recognisable throughout the building," and notably in the great circular walls carrying the dome and peristyle, which are "deep enough" to distribute the weight on the superstructure on to the supports, by the natural "arch rings in their own mass." Up to November 19th, 1924, even Mr. Harvey held this opinion, for after nearly three years' study of the Cathedral, he described the building almost in these words in an article published by him on that date.

His new theory, which rests entirely on argument (for he advances no proof or evidence in support), must have been evolved between December 24th, 1924, and January 14th, 1925, when he first began to publish it, and propounded his alternative scheme of conservation, and adopted Mr. Todd's view that the Cathedral was in a perilous condition, and in danger of immediate collapse, It appears that he was thus the first to claim that this alarming condition was mainly due to its unscientific design and construction by Sir Christopher Wren, aggravated by the work of the ignorant and incompetent Cathedral architects who followed him, and that nothing short of drastic alterations of the original design, and of the incidence and distribution of the load and wholesale mutilation and reconstruction of the building, according to his own designs, could avert its downfall in the near future. What these are and what they involve has been described in my letters.

It only now remains to deal briefly with the evidence of the building itself, to which he refers your readers, which is shown on photographic illustrations given in his book, "The Preservation of St. Paul's Cathedral," pages 9, 10, 62, 65 and 85. After all that he has said of the necessity for "studying structure in minute detail," and the "importance of accurate drawings showing every deflection from horizontal and vertical alignment, every patch and every fracture," it seems astonishing that he should not now be able to produce some evidence of this kind of work from his own surveys, measurements and observations of St. Paul's Cathedral during over three years, but can only refer your readers to the research work and records of other architects, and so far as his own original work is concerned, has only produced rough sketches, of which the illustration given in his last letter, is a fair sample. In this we see the wide gulf between his principles and his practice.

All the architectural drawings, scale diagrams and photo. prints illustrated and used by him are reproductions, and have apparently been taken from the records of the Cathedral authorities, and notably the work of the Cathedral surveyors and staff. The actual blocks to which he makes reference, are more than twenty years old, and in some cases appear to have been cut down to fit his book. The defects shown on them were of long standing, even when these photographs were taken. He did not state in his book, nor does he now explain their age, but continues to put them forward as evidence from the building itself, of the imminent danger of its collapse, and to show how the work of the Cathedral surveyors in the past has contributed towards this catastrophe by injudicious repairs, or has actually hastened the destruction of the building. These photo. prints, as well as several of the architectural drawings and line diagrams, are taken from the official report on St. Paul's Cathedral of the Committee of Architects, 1906-1907, with its appendices, dated August, 1907, and from Mr. Somers-Clark's article on St. Paul's, which appeared at the same time. A comparison of his copies and reprints with the originals, is most enlightening.

Taking, for instance, his photo. print on page 10, which is Figure 5 in his book. The original is in Appendix 4 of the report, and shows the sinking of the cornice and cracks in the clerestory wall in the south transept. This photograph was taken in 1907, and has been so unwisely cut down to fit Mr. Harvey's book that the levelling-up course, inserted at the time the building was being erected, has been removed, whereas the block could quite as easily have been cut down by taking a piece off the bottom, which would not have affected the valuable information to be obtained from it. The original shows clearly that after some 200 years, very little if any further settlement had taken place. He gives no measurements or drawings to show either what the movement in that period has been, nor the further movements, if any, which have arisen in the twenty years since the photo. was taken. I fail to see, therefore, how he finds any support from this piece of evidence.

The photo. print on page 62 is of the west clerestory wall. It was taken on June 7th, 1907, and the original appeared in Appendix 5 of the report. Here again the defect is of long standing; the photograph shows no recent movement, even at that date, and Mr. Harvey gives no particulars of any movement which has taken place since

The photo. print page 65, Figure 39, in his book, originally appeared in Appendix 5 of the report. It was taken in November, 1901, and shows the north-west section of arch 31, Position 1, and is of one buttress in the peristyle. It is typical of the cracks in the thirty-two buttresses at that time, and which also were of long-standing in 1901. It shows the condition before the repair of the peristyle was made. The whole of the peristyle was repaired between 1902 and 1907, so that it did not represent the condition of the building in 1925, when the photo. print was published by Mr. Harvey, and when he published it he might have known that it had ceased to exist for some eighteen years or more, and that no movement had taken place since the repair work was done. If there had been he would have discovered it while he was measuring and surveying the building in 1921-24, and he would unquestionably have given particulars of any movement in minute detail which had taken place in this period of over twenty years, if it had existed.

The settlement shown may have arisen from many causes. The most likely, of course, is the difference in weight between the inner and outer drums, as Mr. Somers-Clark explained when he published this photograph to illustrate this point. It is not evidence in any way of the injury which the work of previous surveyors has caused to the building, but is exactly the reverse, nor does it show damage to the building, which would have arisen from Mr. Harvey's present theory of arch action.

The photo. print on page 85 of his book, Figure 47, was, I believe, taken about the same time as the rest, but was not illustrated in the report. It is fortunate that Mr. Harvey has published it, and referred your readers to it, because it shows the levelling-up course, and also that there was no appreciable movement since it was inserted. Here again he gives no evidence of increase in settlement in 200 years, or that he found any defects in it, or movement in the preceding twenty years, or while he had it under observation for over three years.

We may well ask, is this the best he can bring forward for the enlightenment of your readers? Did ever a mountain in labour bring forth a smaller, more feeble, or insignificant mouse?

Whatever Mr. Harvey may think, your readers are now able to form their own conclusions from this evidence and the correspondence, and I believe will agree with me that the criticisms in my letters have not been answered—perhaps because it was impossible.

In all his letters, long as they have been, he has not mentioned a single new point which he has found and which has escaped the notice of other observers, and having put before your readers the salient points, it seems unnecessary for me to pursue the matter further.

INQUISITIVE.

STONE PRESERVATION AND DECAY.

At Monday evening's meeting of the R.I.B.A. (the President, Mr. Walter Tapper, A.R.A., in the chair), Professor A. P. Laurie, M.A., D.Sc., read a paper on this subject. It was, he said, only in recent years that the matter of stone preservation and decay had been taken up by the Department of Scientific and Industrial Research, who had appointed a special committee to deal with the question, among the other scientific questions involved in the business of building, and had appointed a most capable investigator of building research—Dr Stradling—who, with a well-equipped laboratory and a brilliant staff of assistants was taking up this question of stone decay among other problems.

In considering the various causes of stone decay, it was necessary in the first instance to take into consideration those causes which might be regarded as mechanical. There was, in the first place, the effect of changes of temperature, causing expansion and contraction, an effect which was most marked on stones of complex composition, such as granites, which consisted of a mass of interlocking crystals of different minerals, each with its own co-efficient of expansion with change of temperature. There was also the mechanical effect of wetting and drying. Some stones expanded much more when wetted than others, thus setting up stresses in the mass of the stone which might cause fractures. There was the fact of wind blowing gritty particles against the particles of the stone and rubbing it away. A very remarkable result of the destruction produced by sand particles blown by wind was to be found in rocks in desert regions. The cloisters of Durham Cathedral were another very interesting example. These cloisters were very windy, and the gritty sandstone of which the cloisters were built having once been partially powdered away, the wind had blown the stone dust round and round these cloisters and had drilled holes in the surface of the stone very much resembling the appearance of the bottom of a river stream where holes had been drilled by the action of pebbles rolling with the flow of water. Each of these hollows was full of gritty sand ready for the next wind storm to continue its drilling operations. Then there was the freezing of water in the pores of the stone, the well-known expansion which took place when water had passed into ice, breaking up the stone. The practical effect was much less than would be expected, and was probably due to the fact that, the fall of surface temperature being greater than the fall of temperature within the stone, there was a rise of surface tension which drew water out of the pores, so that the pores were not loaded with water when the freezing took place.

There was also the slow chemical action due to the solvent properties of water itself, and also due to the solvent properties of water containing carbonic acid gas in solution. The various varieties of carbonate of lime, limestone, marble and the calcite crystals contained in many sandstones were all soluble in water containing an excess of carbonic acid gas, and the beautiful stalactites and stalagmites seen in caves and limestone rocks were due to the dropping through the roof of water containing carbonate of lime in solution and depositing it when the drops were exposed to the air. In addition to this natural chemical action it had been shown by recent experiments that there was a bacterial attack upon stones, certain bacteria producing acids which acted upon the stone surface. These might be all regarded as natural causes of decay, but under the conditions existing in our modern cities where large quantities of coal were burnt containing a considerable percentage of sulphur, the burning of the sulphur resulted in the production of a gas known to chemists as sulphur dioxide, and this gas in the presence of air and moisture was converted into sulphuric acid. This sulphuric acid, when brought into contact with any variety of carbonate of lime, attacked the carbonate of lime, converting it into sulphate of lime, a material with which architects were familiar in the form of gypsum or plaster of Paris.

Of all methods of decay there could be no question that the most active at the present day was this attack of the sulphur acids. If the effect were one merely of solution of the stone, sulphate of lime being slightly soluble in water, the decay would not proceed very fast, even in our modern cities; but, unfortunately, what happened was that the sulphate of lime, slightly soluble in water, tended to be deposited in crystals within the surface of the stone, and that the growth of these crystals ultimately shattered the stone surface. The distribution of this mischief was much wider than would have been supposed possible. It was evident that under certain conditions the air containing these sulphur acids was carried over a considerable distance, remote buildings being attacked. To take two examples, Rievaulx Abbey, lying in a wooded vale in Yorkshire far from industrial centres, was found, on analyses of the crumbling stone, to contain a considerable percentage of sulphate of lime; and Ely Cathedral, which was in the Fens, and far away from any great centre of population, contained on the outer walls a curious grey deposit which on analysis proved to contain some 21 per cent. of sulphate of lime. It was evident, then, that the distribution of the decay from the sulphur acids was widespread to-day.

In addition, the interiors of some of our cathedrals had suffered from the careless arrangements made for heating, by which sulphur fumes had escaped into the building, and probably in the old days from the use of the impure coal gas of the past. It was evident, then, that great care should be taken both in the methods of heating and lighting these valuable buildings.

There was, however, another possible source of mischief, to which sufficient attention had not been devoted. His attention was first directed to it by an inquiry which he made into decay of the stone taking place in the Bowes Museum. He found that this decay was taking place principally on the lower portions of the building, and that it was due to the crystallisation in the stone, not of sulphate of lime, but of sulphate of magnesia. Now, in the case of a magnesian limestone, such as that from which the House of Commons was built, sulphate of magnesia was often found as the destructive cause, but the analysis of the stone and the mortar used in the building of the Bowes Museum showed only traces of magnesia, while in the cellars of the building it was possible to scrape off masses of efflorescence from the walls consisting of almost pure sulphate of magnesia crystals. Owing to the fact that foundations were being made for a new building, he was able to get hold of some of the subsoil some 8 ft. down, where it was in contact with the rock, and an analysis of this subsoil showed a high percentage of sulphate of magnesia, and there could be no doubt that the source of the sulphate of magnesia was to be found in these subsoil waters.

In this particular building a series of mistakes had been made—in the first place, in the selection of a site The building was on sloping ground with a considerable area of high ground behind it, and the dip of the strata was such as to cause a banking up of water under the building coming from the high ground behind. Moreover, the concrete floor inside the building was some 3 ft. above the level of the dampcourse outside, and on digging down through the floor wet soil was found to be resting against the level of the walls above the level of the dampcourse. The dampcourse itself was very imperfect, being made of a mixture of tar and sand which had crumbled and broken up.

There could be no question that the most important cause of rapid stone decay to-day, especially in our towns, was the crystallisation of sulphate of lime within the stone or brick. It was necessary to investigate this matter further, and therefore in the first place we had to consider the selection of a suitable material to stand the conditions in modern cities. Dealing first of all with the question of stones, and ruling out the more specialised and expensive stones, such as granite, it was necessary to consider the respective merits of the ordinary building stones.

In the south the building stones principally used were oolitic limestones, while in the north sandstones were very largely used for building, but sandstones varied in the amount of carbonate of lime, in the form of calcite, they contained, some sandstones consisting of particles of quartz cemented together by silica, and therefore not attacked by sulphur acids. But sandstones which contained large quantities of calcite, the calcite being itself the binding material, were peculiarly liable to disintegration when attacked by sulphur acids. The following experiments illustrated this very clearly. If we poured some acid on to some broken pieces of Portland stone, it would be seen that a brisk effervescence took place of carbonic acid, the stone being rapidly dissolved. If we now poured some acid on to fragments of a sandstone containing a considerable quantity of calcite, we saw the same brisk effervescence, and the sandstone was rapidly disintegrated into the loose sand. If, on the other hand, we took a sandstone, such as the Cullaloe stone, which was used by Sir Robert Lorimer for the Thistle Chapel in Edinburgh, we found that the acid had no effect upon it. It was obvious, then, that the problem of building permanent buildings in those parts of the country where sandstones were available was a comparatively simple one.

If one was to speak as a purist, the right building material for London was the London stock brick or a brick of equal quality which had stood centuries of exposure to London conditions with remarkably little decay, and the use of limestone in London was obviously from the scientific point of view unjustified. It was true that some of the older buildings built with Portland stone, although decaying, had stood up wonderfully well, but it was questionable whether the Portland stone erected to-day was standing as well. But if limestones were to be used, it was obvious that there were limestones and limestones, and also the tradition of Portland stone was justified by those acid tests, although the Lincoln Cathedral stone (oolitic limestone) seemed to be even better.

Having dealt at some length with the problem of crystallisation, which, he said, and the conditions under which it took place, were the principal questions which we had to study, the lecturer said the moving of water had a wider significance. It had been customary to consider stone or brick as if it were an isolated object, and not to remember that it formed part of a wall surface in which there was also mortar or cement. In the case of a building made of large blocks of stone with very thin jointing, the question of the mortar or cement was probably not of importance,

but in the case of a brick building or a stone building in which there was a considerable amount of mortar surface, we could not leave the mortar out of consideration. Now the mortar was composed of a mixture of lime and sand, and if cement were used it also consisted of lime compounds in which a good deal of free lime was present, and all of which were more or less attackable by sulphur acids. It was evident, then, that in mortar or cement we had as a source of supply sulphate of lime which might, under certain conditions, be drawn into the brick or stone, and therefore, even though we used a silicious stone or a brick free of itself from soluble lime compounds, the destruction might be due, in the first place, to the formation of sulphate of lime within the mortar or cement, and, in the second place, the drawing of the solutions of the sulphate of lime into the brick or stone and there crystallising *in situ* with the resulting destruction.

Stone preservatives, as they were called, might be roughly classified into organic preservatives, such as paraffin wax, linseed oil, solutions of resins and soaps, and into preservatives which were meant to act upon the carbonate of lime contained in limestones and some sandstones with a view to forming insoluble compounds such as silicate of soda or arseniate of soda and fluosilicic acid and its salts. To this he might be allowed to add the preservative which he thought he had been the first to suggest, but found afterwards it had already been suggested many years ago by the German chemist, Hoffmann, and that was Silicon Ester, a liquid which, thinned with alcohol, could be soaked into a stone, and on exposure to air and moisture deposited a thin layer of hydrated silica as a cement.

The problem that Silicon Ester was devised to solve was a special one. He had been asked by the Office of Works to see what could be done to preserve the crumbling stone carving and moulding, more especially of the sandstone ruins of ecclesiastical buildings in Scotland. It was necessary to re-cement the crumbling surface just as it was, without any brushing, and in the first instance he used a weak solution of resin in a solvent like toluol. This penetrated well, cemented the stone together, and did not produce scaling. Owing to the fact that the resin itself weathered, after about five years surface decay began again, and a fresh spraying was necessary. He therefore searched for a liquid which would deposit an indestructible cement and this was found in hydrated silica. The Silicon Ester solution as it dried out and was exposed to air and moisture deposited a colourless cement of hydrated silica round the particles of stone. At the same time it had a protective value. Since he first tried it much valuable research had been done on the use of this solution. It had been improved in manufacture, and it had been found that it was necessary to adjust the solution according to the variety and general condition of the stone or brick to which it had to be applied. Reconstructed stone which could be carved had been made with it, and a cement free from lime, and it had also been used as a medium for fresco painting.

It had been recommended by some of the German chemists and by the Department of Scientific and Industrial Research that the amount of free lime in mortar should be reduced and that substances in the nature of pozzuolana should be introduced with a view to forming compounds of lime which were fairly insoluble, thus returning to the practice of the builders of Imperial Rome, who mixed pozzuolana or similar materials with their mortar. Such materials were Trass, found in the neighbourhood of the Rhine, and burnt clay or crushed bricks, and they had in Scotland an inexhaustible supply of such material in the heaps of burnt shale lying on the oil fields near Edinburgh.

To depart from the problem of patching up buildings in which decay was taking place to the problem of construction and the choice of material, it was, he thought, obvious that architects had not given sufficient attention to these two questions. In the first place, it was evident that there should be no difficulty in the choice of a suitable stone, and that limestones varied in their capacity to stand attack; that the aim should be, where limestones were used in such a climate as London, to produce flat surfaces and avoid cornices, where moisture would linger. The rain-washed surface stood the attack fairly well, but it was the changing conditions of moisture and the movements of salts within the stone, caused by its changing conditions of moisture, which were the main source of decay. It was also important to obtain as dry a wall as possible. It was not only necessary to have a reliable dampcourse, but there should be ventilation above the dampcourse and into the interior of the wall, and it was worthy of consideration by architects whether there should not be air passages through the whole height of a wall so as to get the wall as dry as possible. Hosing down all wall surfaces, especially under cornices and carvings, two or three times in warm weather should be done so as to cause the rapid crystallisation and washing away of salts. This would probably do a good deal to preserve these limestone buildings.

Discussion.

Dr. R. E. Stradling, proposing a vote of thanks to Professor Laurie, said he agreed with the lecturer that the point about selective decay when materials were associated together was most important. They should try to make a mortar joint that would allow the outlet of salts; if they did not, they would assuredly have decay. The porcelain tubes which had been adopted at Versailles performed this function.

Mr. H. D. Searles-Wood, seconding the motion, said, after hearing Professor Laurie's address, he felt they would have to go back to school again, for the lecturer had controverted almost every point they were taught in their younger days. Apparently there was something to be said in favour of the jerry builder who left plenty of air spaces in his buildings.

Mr. E. P. Warren referred to the badly decayed stonework of the collegiate buildings of Oxford, and described the work he had done towards preserving some of them. In certain instances he had used paraffin wax with success.

Mr. W. A. Forsyth urged that, if a heating medium in buildings caused moisture artificially to evaporate to the detriment of the stone, means should be taken to restore that moisture. On the question of preservation, he had used a copper wash to preserve plaster, brick, and woodwork. It killed all organisms that attacked the materials, and preserved the materials almost in the condition in which they were first erected. He had covered, with copper (not lead), sills, cornices, string courses, etc., with success.

Sir R. J. Allison said that, so far as the Office of Works was concerned, they were still waiting for a method of arresting decay in stonework. The speaker drew attention to the fact that the Piccadilly frontage of the Geological Museum was built of the same stone as the Houses of Parliament, some seventy or eighty years ago, and it was still in good condition. Presumably, if there had been proper selection of the Houses of Parliament stone, we should not have trouble now.

Mr. J. Allen Howe said we must make up our minds what we wanted to preserve—whether it was the colour, texture, and tone of the material, or merely the frontage. If the latter, then we need only paint our frontages, as was done regularly in the case of the Athenæum.

Mr. Alan E. Munby referred to the samples of building stones which for the past twenty years had been exposed on the roof of the Geological Museum for testing purposes. They were examined every ten years, and an interesting series of photographs had been taken of them.

The vote of thanks having been put to the meeting by the President and carried unanimously, Professor Laurie briefly replied to points raised in the discussion.

CORRESPONDENCE

"Houses and the Preservation of Rural England."

Sir,—My attention has been drawn to a statement made in your issue of the 17th inst., by Mr. E. Boulton, of Blackburn, with reference to housing schemes and similar works carried out during the past few years.

In it he talks of "my stumping the country and writing to the Sunday newspapers complaining of the spoliation of the countryside" by members of the Royal Institute of British Architects. If he had taken the trouble to read my various remarks and statements which have appeared in the Press from time to time, he would have seen that in no single instance have I ever blamed any member of the Institute, or indeed architects in such matters. My complaint throughout has been not of the housing schemes or council houses, but of the independent bungalows or shacks put up by the dozen over the country by speculative builders or incompetent amateurs, with no relation to their surroundings, and which are spreading like a disease, not only in the outskirts of the towns, but throughout the country. These are done in the majority of cases without the aid of any architect, and do infinite harm to our profession.

I have continually expressed my great admiration for many of the housing schemes carried out by members of the R.I.B.A., which are excellent in every way and a great asset to the district in which they are built. It is only where these schemes are placed in the hands of local officials without any architectural training that we see the displeasing results which so spoil our countryside. It would be well for your correspondent, Mr. Boulton, to make sure of his facts before indulging in charges of this nature.

E. GUY DAWBER.

The New Form of Building Contract.

Sir,—The letter of the Secretary of the Builders' Merchants' Alliance, Limited, published in your last issue, requires an immediate reply, because it contains many serious misstatements in regard to the new Form of Contract, as well as omitting to state the various safeguards put into this contract for ensuring early payment to the builders' merchant of his just claims.

In the first place, the letter fails to appreciate the existing law, which must be considered in relation to this matter. By decisions of the House of Lords in 1917, the builder and the builder alone was held to be responsible for the payment of a nominated sub-contractor's bill for goods supplied under the terms of the 1909 contract, and the new Form of Contract does not alter the liability of the builder in this respect at all.

If, then, the builder is to be made responsible for paying builders' merchants for goods which the architect selects, and on terms which the architect arranges with the merchant without consultation with the builder, the problem of the contract between the employer and the contractor is to lay down the conditions under which the builder is to be compelled to assume this liability. The new Form of Contract deals with this problem alone, and there is not a single term in it which is not consistent with the terms of the 1909 Form, although admittedly it is franker and clearer in defining the terms.

The 1909 Form provided that the builder should not be compelled to enter into such a sub-contract unless the sub-contractor "entered into a contract with the contractor upon terms and conditions consistent with those in the contract," and the three conditions which are set out in Clause 25 of the new Form are all strictly consistent with the main contract.

There is nothing whatever in the new Form to prevent the builders' merchant refusing to supply materials to the builder on the terms of the main contract or to prevent the employer purchasing goods from

the builders' merchant direct without the intervention of the builder at all, or to prevent the employer taking liability for goods and paying the builders' merchant direct, but if the builders' merchant is prepared to quote on the terms of the principal contract, then and then only may the builder be called upon to accept liability for payment to the builders' merchant, and (what is even more important) liability for his correct discharge of the sub-contract.

The letter of the Builders' Merchants' Alliance contains many statements inconsistent with the above. It further sets up a long argument based upon the liability of the employer for the builders' merchant's account and the difficulty under the new Form of recovering payment from the employer. This, of course, is entirely inconsistent with the fact that under the existing law the employer has no liability whatever to pay the builders' merchant for goods which are delivered to the order of the builder. As to whether or not the builders' merchant should give credit to the builder is a matter for the business consideration of the individual builders' merchant in relation to the individual builder, but it is entirely erroneous to suggest that under the old Form the builders' merchant had behind his transaction the financial credit of both builder and employer.

The letter from the Builders' Merchants' Alliance, however, is not only misleading by inaccuracy, but by omission. It fails altogether to mention the new provisions of the new Form which deal with ensuring that payments to the builders' merchant will be made by the builder (Clause 19a) or with expediting the payment to the builder and thereby expediting the payment to the builders' merchant (Clause 19b), or giving to the architect a special discretion to provide for payment by the builder to the builders' merchant before final payment to the builder (Clause 25 (3)). These points have all been dealt with in the series of articles contributed to your journal by Mr. E. J. Rimmer, and it is therefore unnecessary to deal with them at length here. It is enough to say that upon the true interpretation of the 1909 Form and of the new Form, the position of the builders' merchant is probably better under the latter than under the former, and that there is not one provision in the new Form which is inconsistent with the old.

What the Builders' Merchants' Alliance are now attempting to do is to take advantage of the present position to improve their own position, and to endeavour to secure for the builders' merchant a preferential position amongst the builder's creditors, and in fact the security of the credit of both the builder and the employer—the best of both worlds! The builders' merchants may sell their goods under such conditions of contract as they may secure, but it is clearly outside their province to endeavour to come between other contracting parties and dictate to them the terms which they, inter se, should agree.

A. G. WHITE,
Secretary.
National Federation of Building Trades Employers.

[Owing to pressure on our space, we are obliged to hold over letters on "The Decadence of Sculptured Foliage in Architecture"; "High Buildings and the Purpose of Life"; and "Roofs."—ED.]

New Manchester Cinema.

One of the largest cinemas in the country is shortly to be built in Manchester. Costing £400,000, and capable of seating 4,500 people, it will be erected on an island site in the centre of the city. The site was bought by the Shaftesbury Estates, Ltd.

New Mental Defective Colony, Durham.

Messrs. Rees & Holt, of Liverpool, have been appointed architects for the new Mental Defective Colony to be erected at School Aycliffe, Durham. The scheme is an extensive one and includes accommodation for 1,000 inmates.

ILLUSTRATIONS

Church at Alassio.

This church is to seat approximately 500, and is being built in an old garden, the central walk of which leads up under a pergola to the main porch in the middle of the south side of the church. The walls are built in rough stone, finished with stucco, and limewashed inside and out. The roof is covered with Italian tiles. Inside it is an open timber roof, built of Douglas fir. All the other interior woodwork is Italian walnut, slightly waxed.

Messrs. William G. Newton & Partners are the architects.

Westminster Bank, Walham Green.

This bank has been erected from the designs of Mr. E. Guy Dawber, A.R.A., P.P.R.I.B.A., who, as we have already recorded, has been nominated for this year's Royal gold medal.

House in Church-street, Chelsea.

On page 326 we publish an obituary notice of the late Mr. Halsey Ricardo. One of our illustrations shows the street frontage of the house in Church-street, Chelsea, which he designed for his son-in-law, Mr. Maresco Pearce. The garden frontage of the house is illustrated on one of our Notes pages.

House at Hurtwood, Surrey.

The site of this house, which stands high and is well wooded, commands extensive views to the south. The walls are being built of local sandstone, and the roof covered with blue-green glazed Lombardy tiles. Open loggias occupy the southern ends of both the wings on the first floor. The photographs are of the model made in the architect's studio.

Mr. Oliver Hill, F.R.I.B.A., is the architect.

Proposed Bathing Pool, Brighton.

It is proposed to erect a bathing pool at Brighton at a cost of £175,000. The design, which is entirely the work of the Borough Surveyor, Mr. David Edwards, M.Inst.C.E., F.S.I., includes the following features: Site—between the second and third groynes east of the Palace Pier. Accommodation—492 dressing-boxes, arranged on two sides of a square, one half for men, one half for women; 24 shower-baths; rooms for school-children; refreshment rooms; open-air café; small bandstand; lavatories; kitchen, administrative rooms and stories; two first-aid rooms; kiosk for sweets and tobacco. Surface of Bathing Pool—330 ft. from east to west, 120 ft. from north to south. Depth—for the most part from 3½ ft. to 4½ ft.; central portion dropping to depth of 12 ft. to allow of water-polo matches and diving. The racing course is 16 lengths to the mile. Forming the border of the water is a bathers' promenade, 10 ft. wide. This is surrounded by steps, leading to an upper promenade 9 ft. wide, overhung by a balcony all round the bath. This will provide shelter in inclement weather. This balcony supports a promenade on the level of the Madeira-road, entirely surrounding the bath, and 22 ft. wide. Its total length is 400 yds. On the inner sides of this promenade is a three-tier balcony, the front of which is carried on columns, which columns are in front of the dressing boxes below. On the two levels there will be seats for 3,250 spectators.

Design for Poultry Market and Parish Hall.

This design is by Mr H. L. Meed, of the Second-Year Design Class, Polytechnic School of Architecture.

Proposed Seaside House in Sussex.

This Rottingdean freehold property, near the shore, is situated above the cliff skirting the south coast main highway to Brighton, and is close to the old village street. A house intended for so exposed a downland site had to be planned accordingly, the external doorways being screened from prevailing winds, and the windows are sashes, casements being ill-adapted to such a position. The lay-out is contrived to ensure the advantage of fine views to the west and seawards. Facility of administration and economic building necessitated a compact arrangement. A good-sized living-room towards the south has a garden way. Alternative balconies east and west are available according to the season. The first-floor landing obtains the morning sun to brighten up the interior in spring. The flat over the rear building commands the N.W. prospect of the hills in the distance, seen over the famous tower of the ancient church.

Mr. Maurice B. Adams, F.R.I.B.A., designed the house for the freeholders, the Misses Adams.

MEETINGS

MONDAY, *February* 27.

Builders' Merchants' Alliance, Ltd. Meeting to consider New Form of Building Contract. Connaught Rooms, Great Queen-street. 2.30 p.m.

The Architectural Association. Dr. Leonard Hill on "Sunlight in Buildings." 7 p.m.

Institution of Electrical Engineers. Mr. D. S. Munro on "Modern Electric Wiring, particularly as applied to Small Houses." At Armstrong College, Newcastle-upon-Tyne. 7 p.m.

TUESDAY, *February* 28.

Institution of Electrical Engineers (Teeside Centre). Annual Dinner.

Royal Society of Arts. Sir Stephen Montagu Burrows on "The Ancient Civilisation of Ceylon." 4.30 p.m.

WEDNESDAY, *February* 29.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "The Mediæval Period: The Tower of London." 6 p.m.

Leeds and West Yorkshire Architectural Society. Discussion on "That Architectural Competitions be Open, not Limited." 6.30 p.m.

Royal Society of Arts. Mr. A. Crawford on "Industry Fifty Years Hence." 8 p.m.

THURSDAY, *March* 1.

Architecture Club. Annual General Meeting. At 34, Bedford-square, W.C.1. 8.30 p.m.

Victoria and Albert Museum. Mr. L. H. Wellington on "Crome and Constable." 5.30 p.m.

Institution of Structural Engineers. Discussion on "Practical Design of Light Steel Structures, with special reference to Sheds." Introduced by Mr. J. Manders. At the Chamber of Commerce, Birmingham. 7 p.m.

Auctioneers' and Estate Agents' Institute. Sir Theodore Chambers on "Welwyn Garden City." 7.30 p.m.

FRIDAY, *March* 2.

Glasgow Architectural Craftsmen's Society. Mr. T. Somers on "Construction of the Kelvin Hall." 7.45 p.m.

The Scientific Treatment of Ancient Lights Cases.

On Friday, February 24, at 7.30 p.m., a special lecture will be given at the Northern Polytechnic, Holloway-road, N., on the "Scientific Treatment of Ancient Lights Cases." The lecturer, Mr. Hugh S. Allpress, will indicate methods of determining—by mathematical calculation—the degree of obstruction or reduced illumination consequent upon the erection of adjacent buildings. The system illustrates the application of scientific formulæ in place of the old methods of opinion and prejudice, thereby reducing ancient lights problems to a basis of definite evidence capable of assessment. An invitation is extended to all who are interested, and admission will be granted on presentation of visiting card.

UNIV. OF MICH.

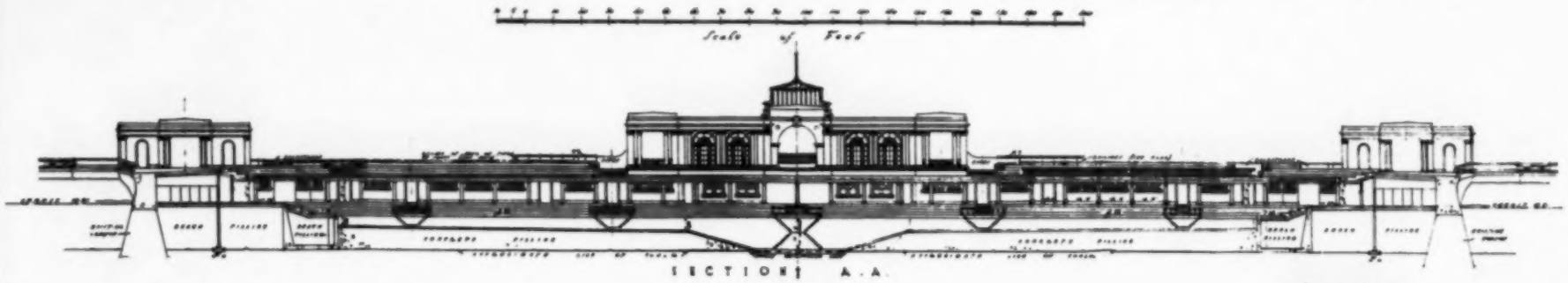
Westminster Bank, Walham Green, S.W.

Mr. E. Guy Dawber, A.R.A., P.P.R.I.B.A., Architect.

UNIV. OF MICH.

COUNTY BOROUCH OF BRICHTON BATHINC POOL

Scale of Feet



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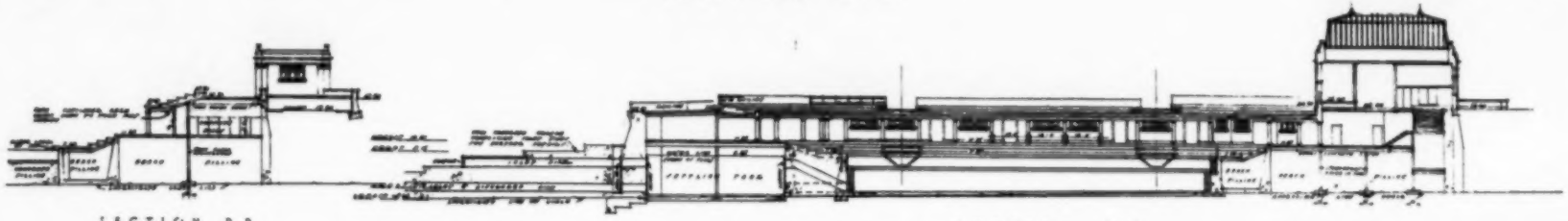

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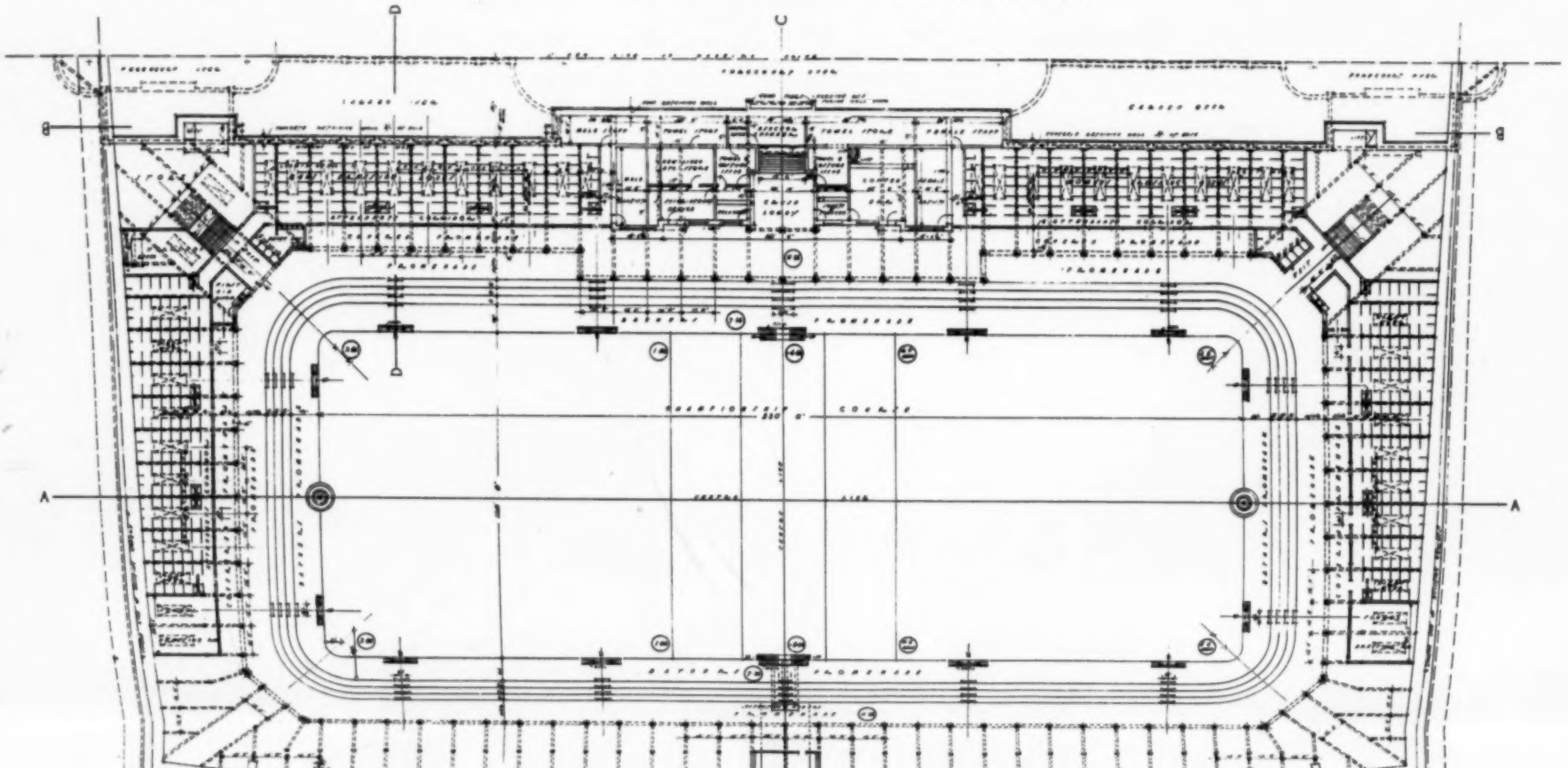
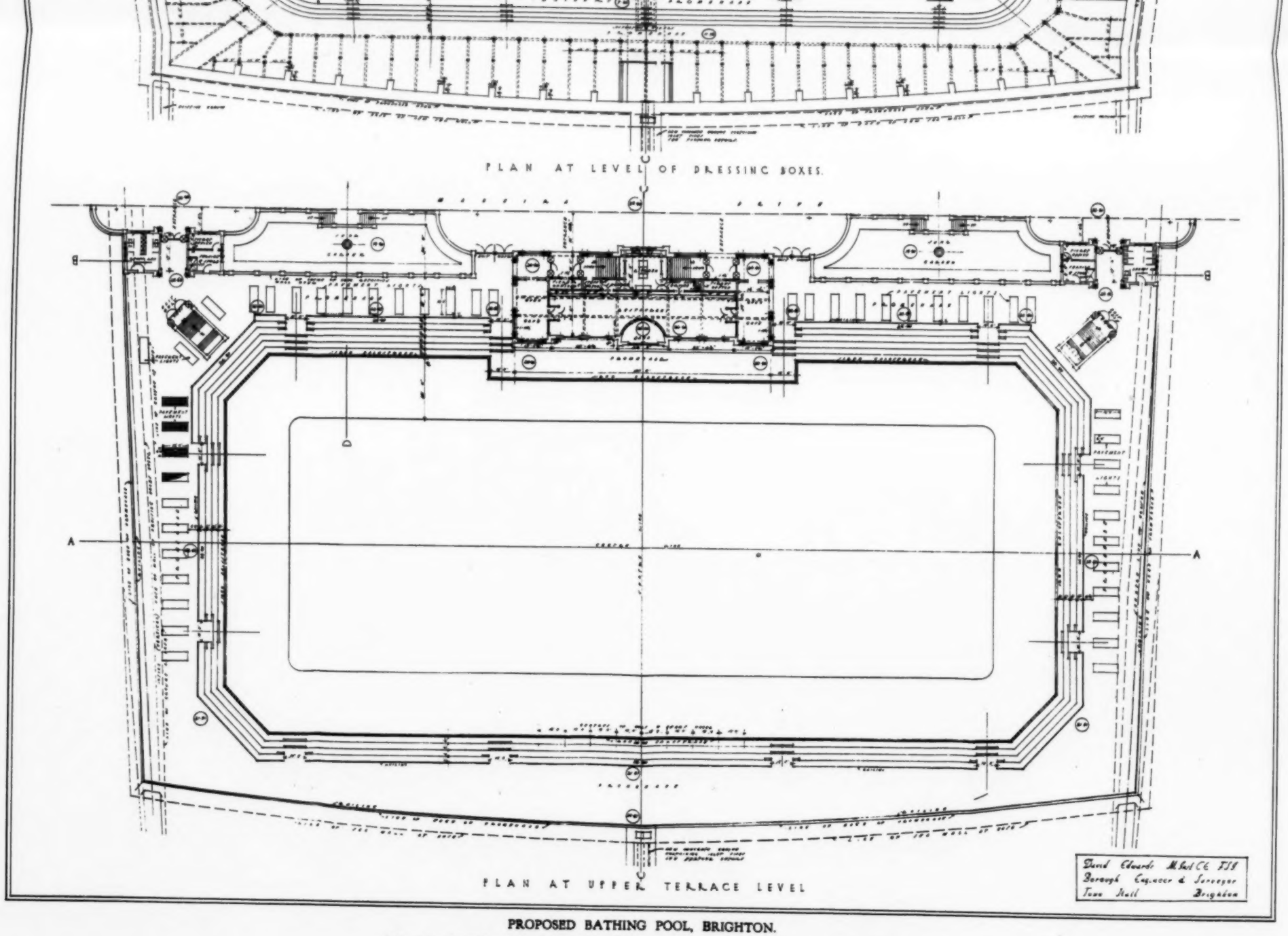
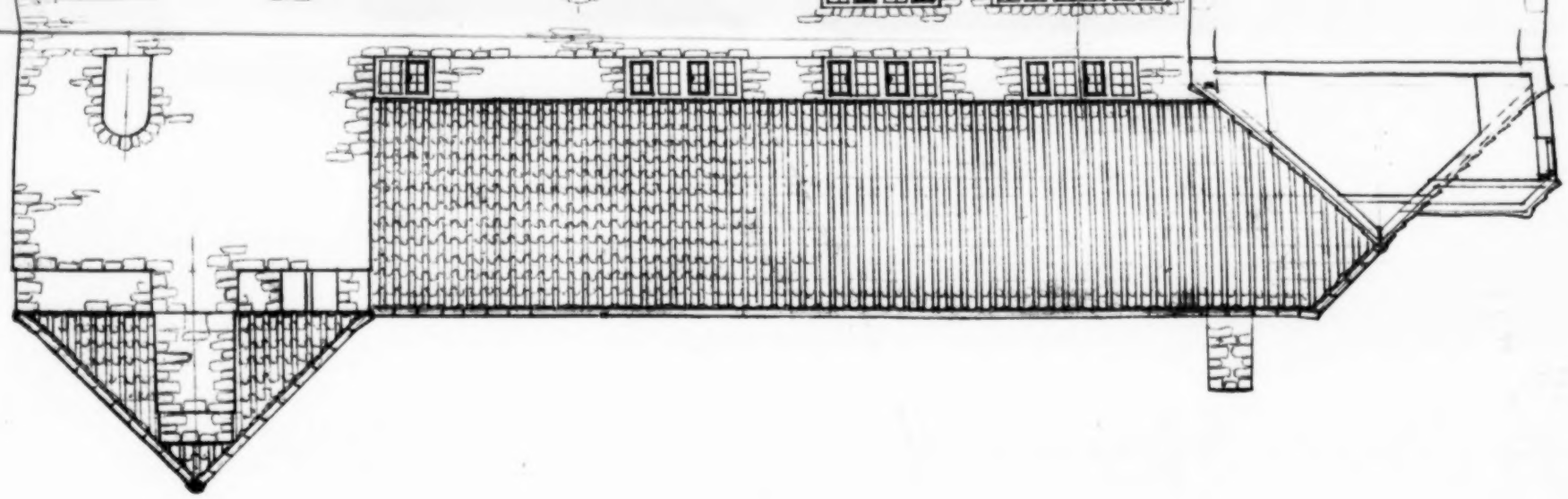


THE BUILDER, FEBRUARY 24, 1928



PROPOSED BATHING POOL, BRIGHTON.

Mr. David Edwards, M.Inst.C.E., F.S.I., Borough Engineer and Surveyor.



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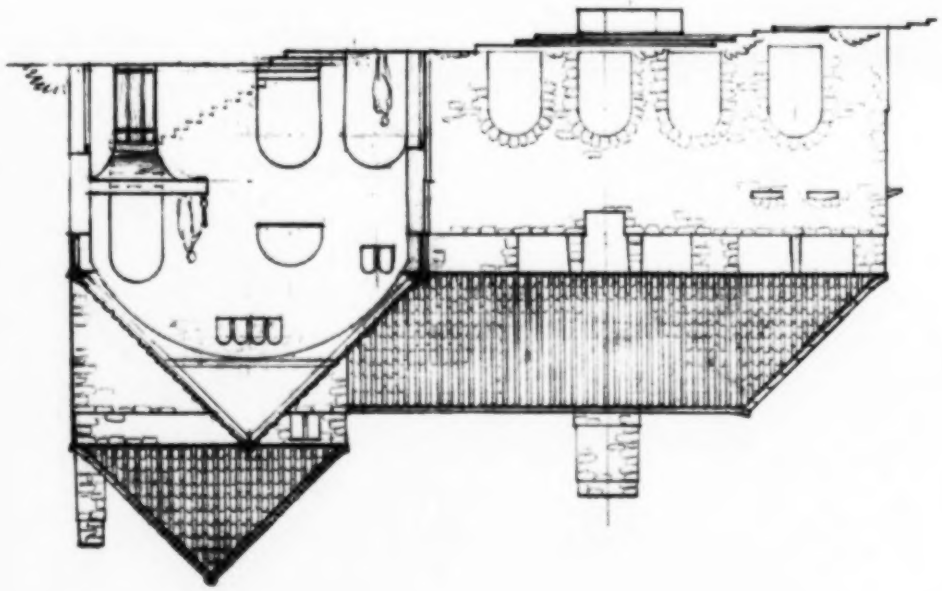
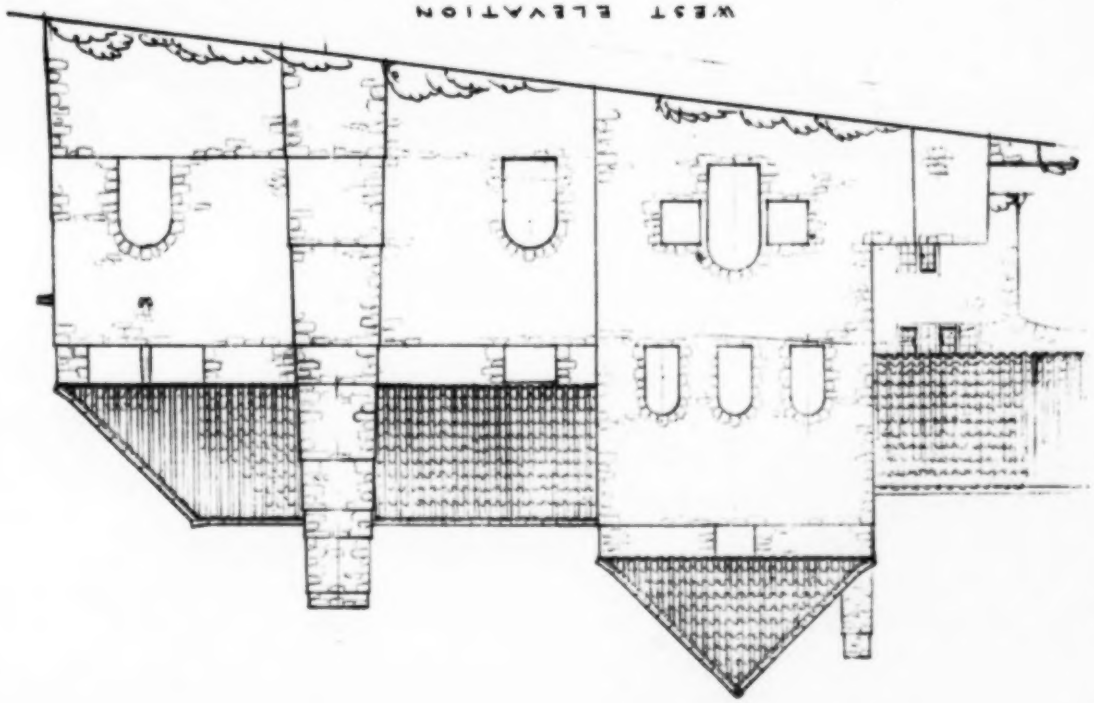
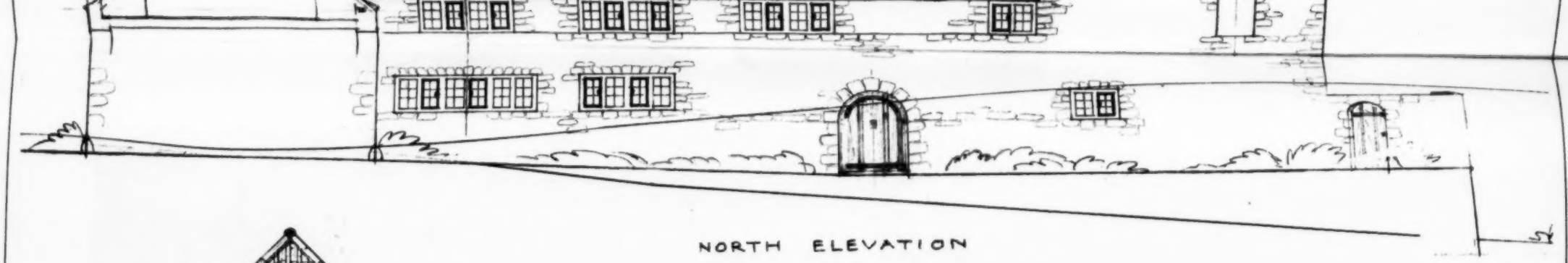
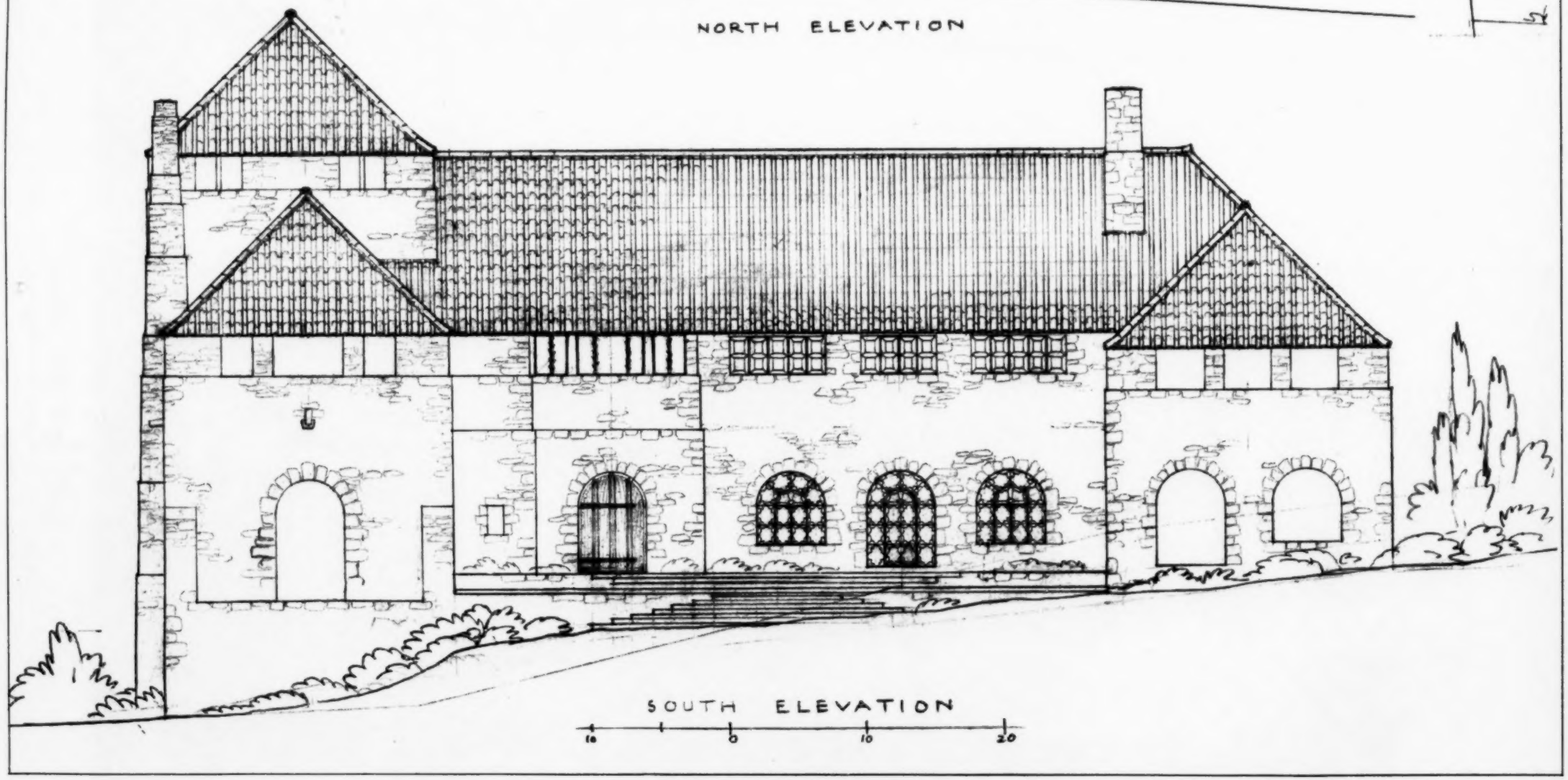



WEST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION

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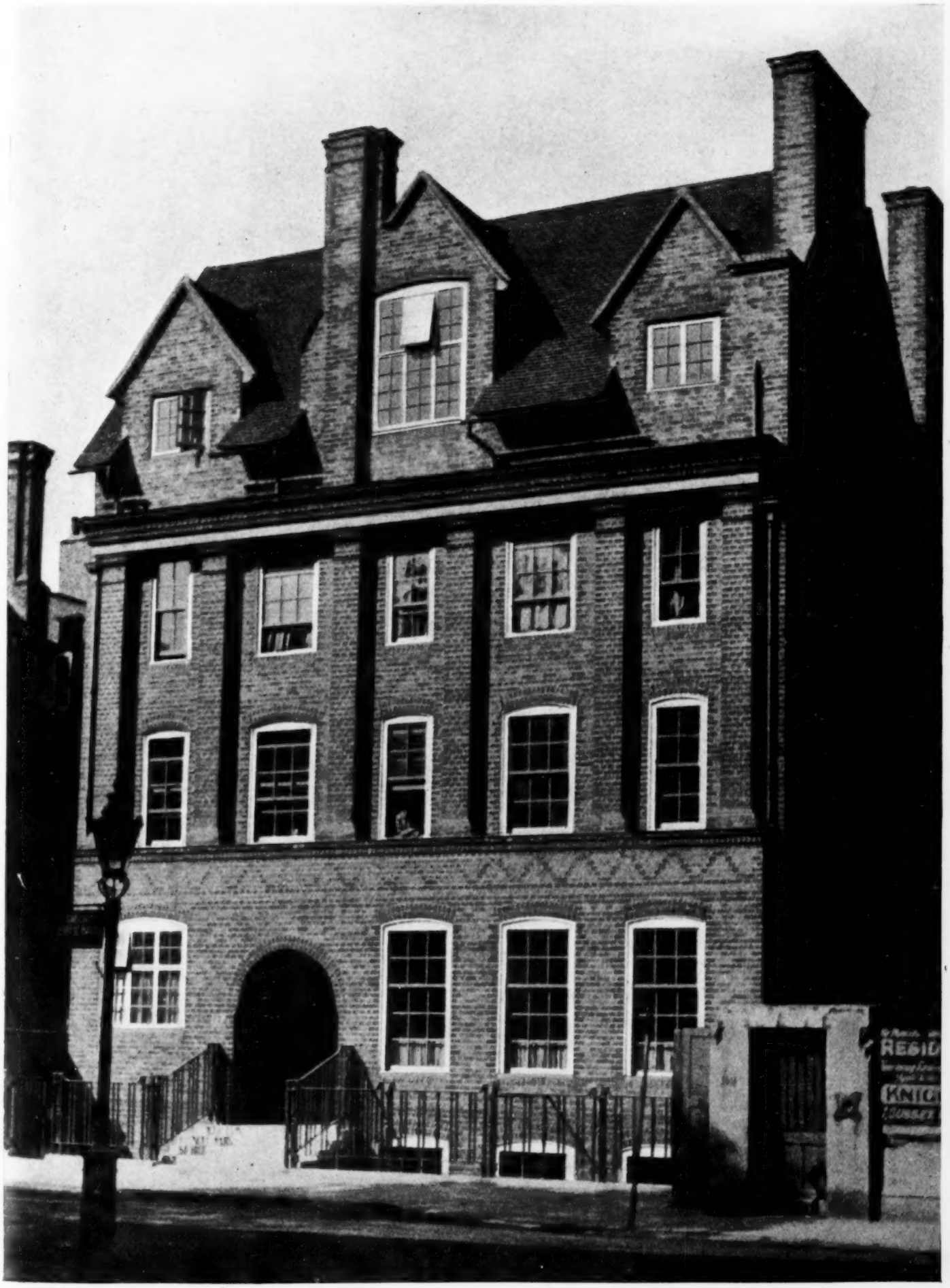
HOUSE AT HURTWOOD, SURREY.

Mr. Oliver Hill, F.R.I.B.A., Architect.

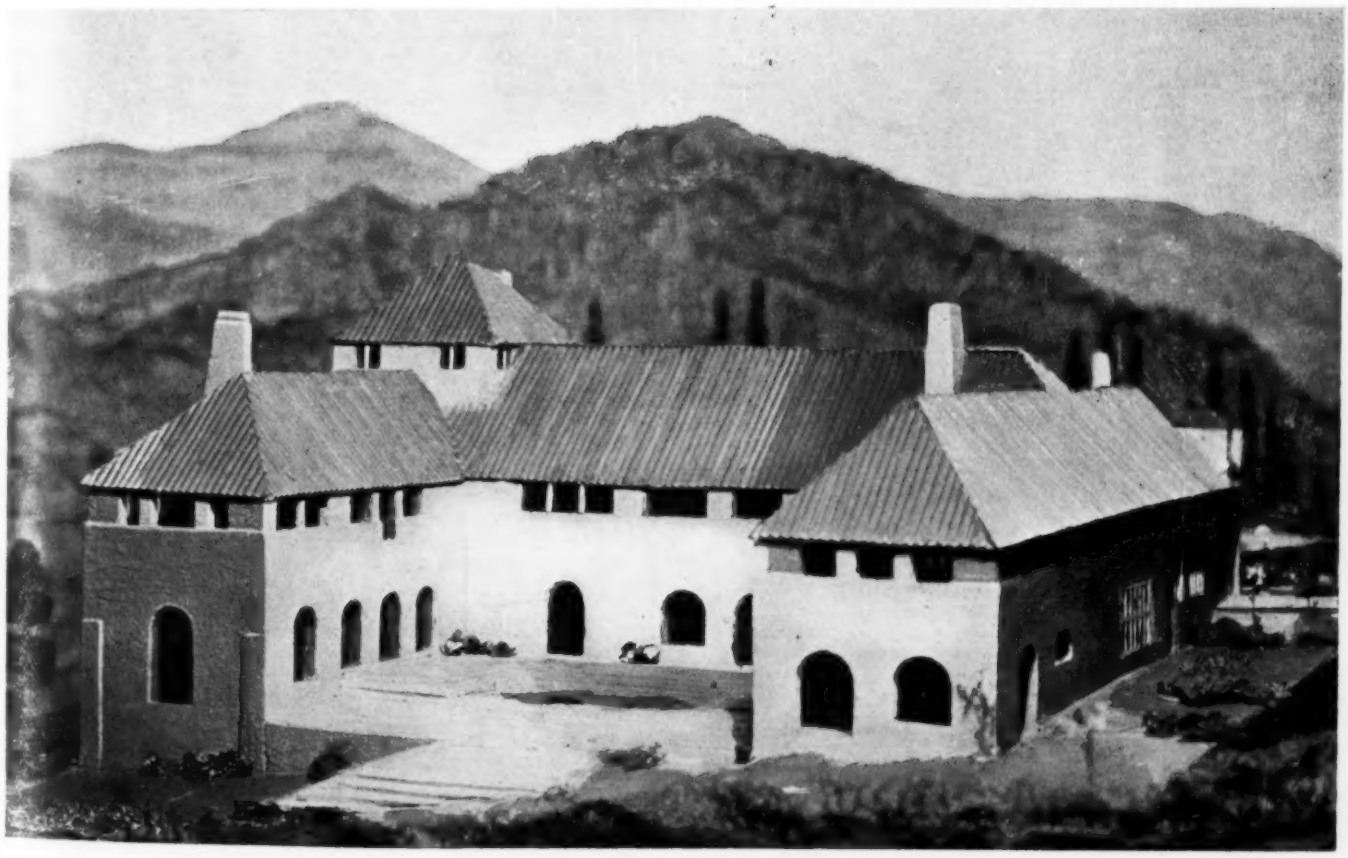
UNIV. OF MICH.



House in Church Street, Chelsea.

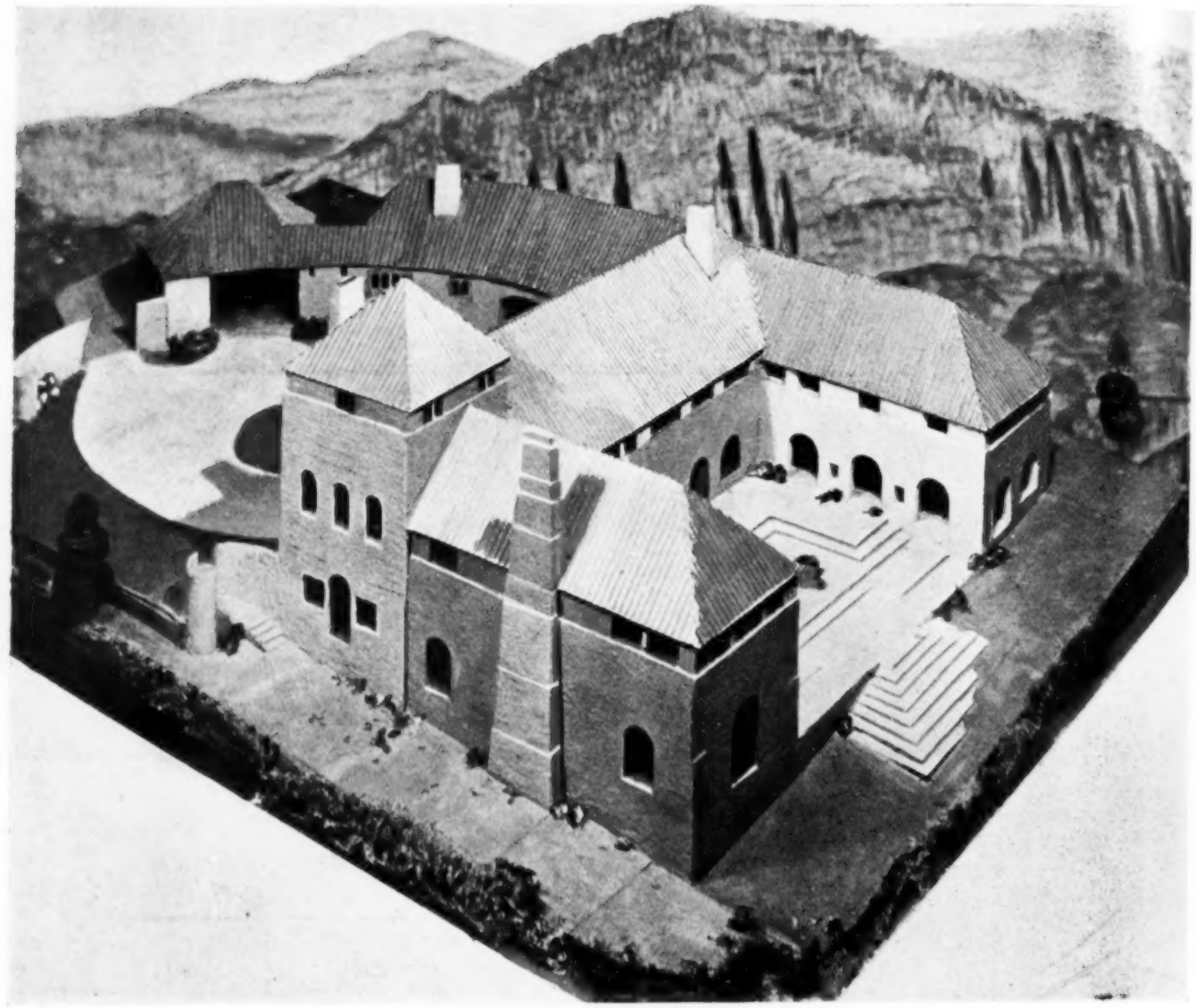
The Late Mr. Halsey Ricardo, F.R.I.B.A., Architect.

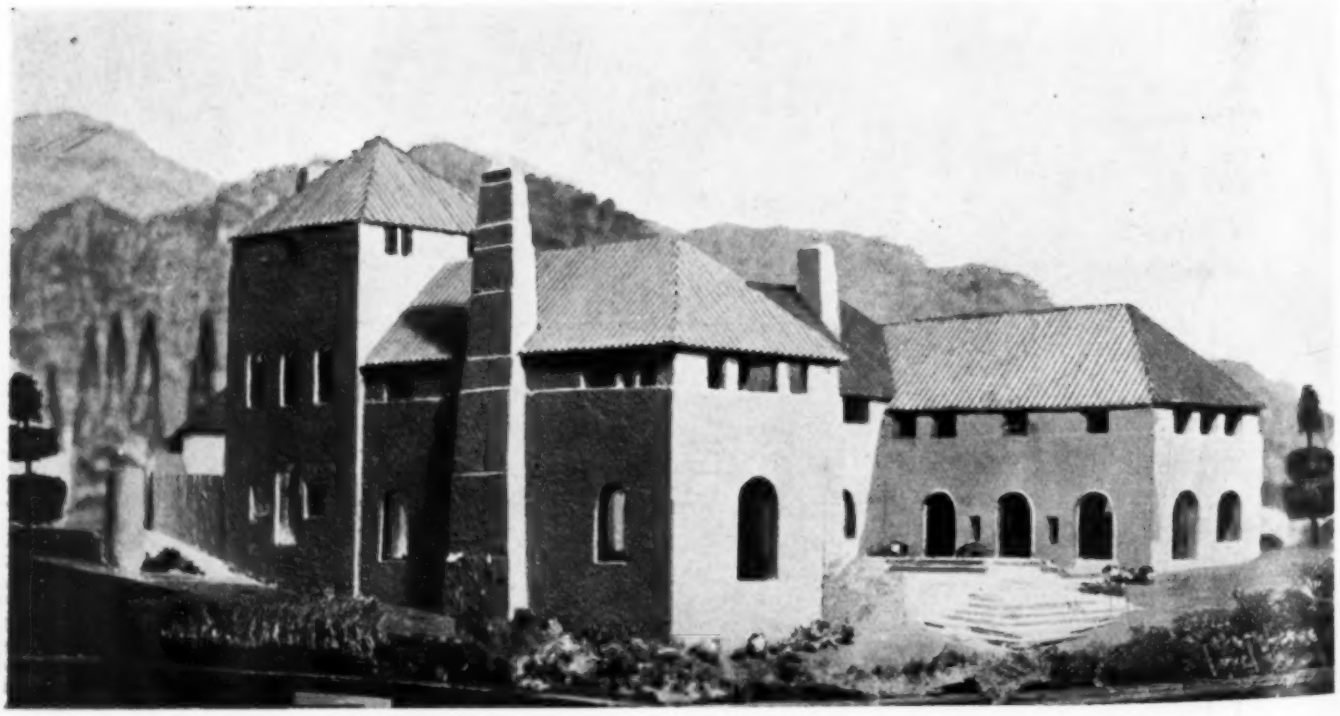
UNIV. OF MICH.



House at Hurtwood, Surrey.

MR. OLIVER HILL, F.R.I.B.A., Architect.





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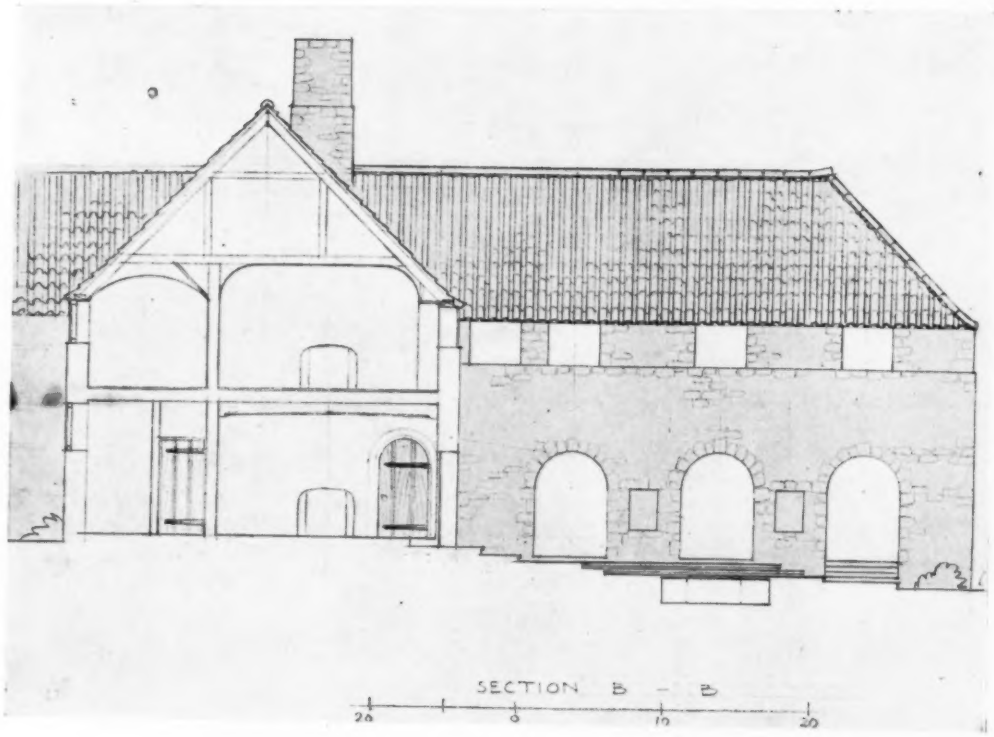

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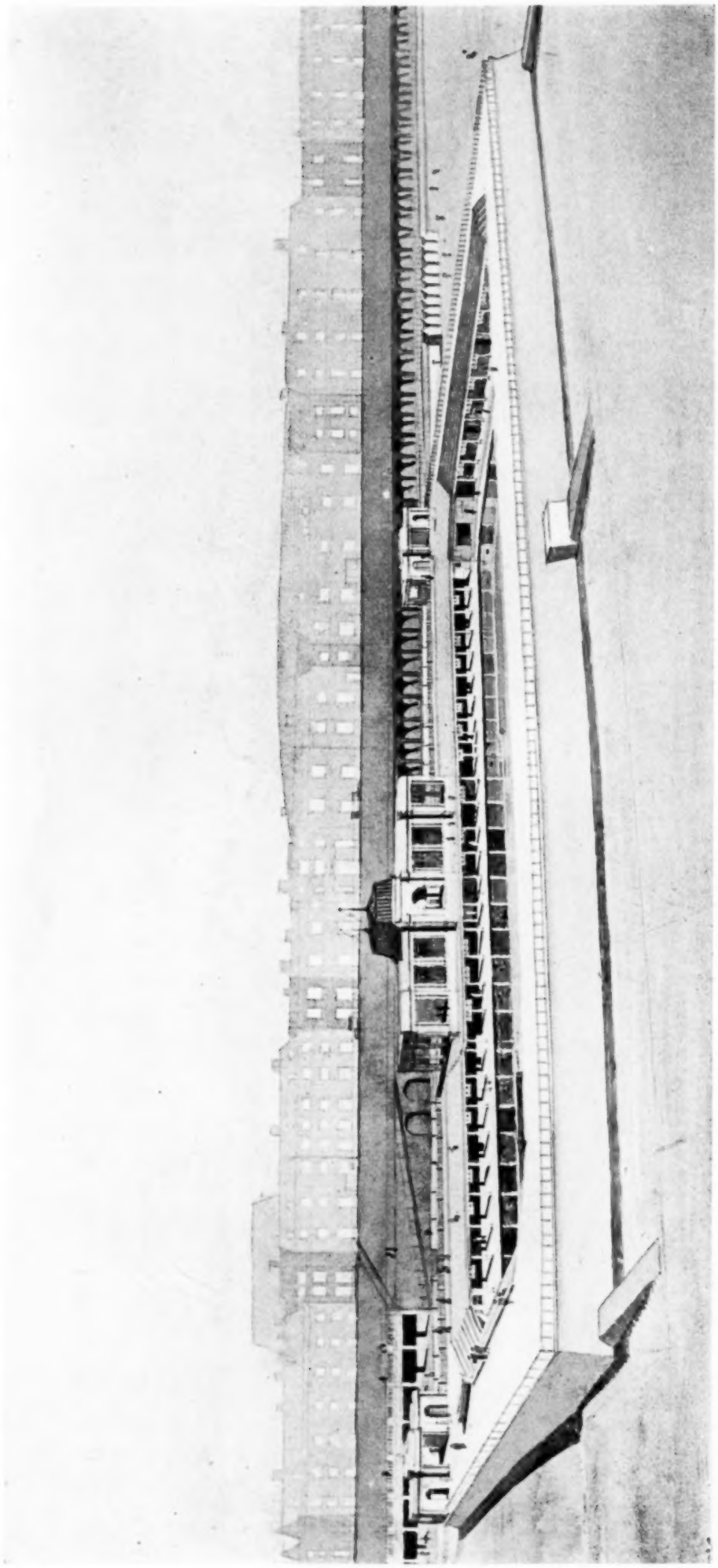
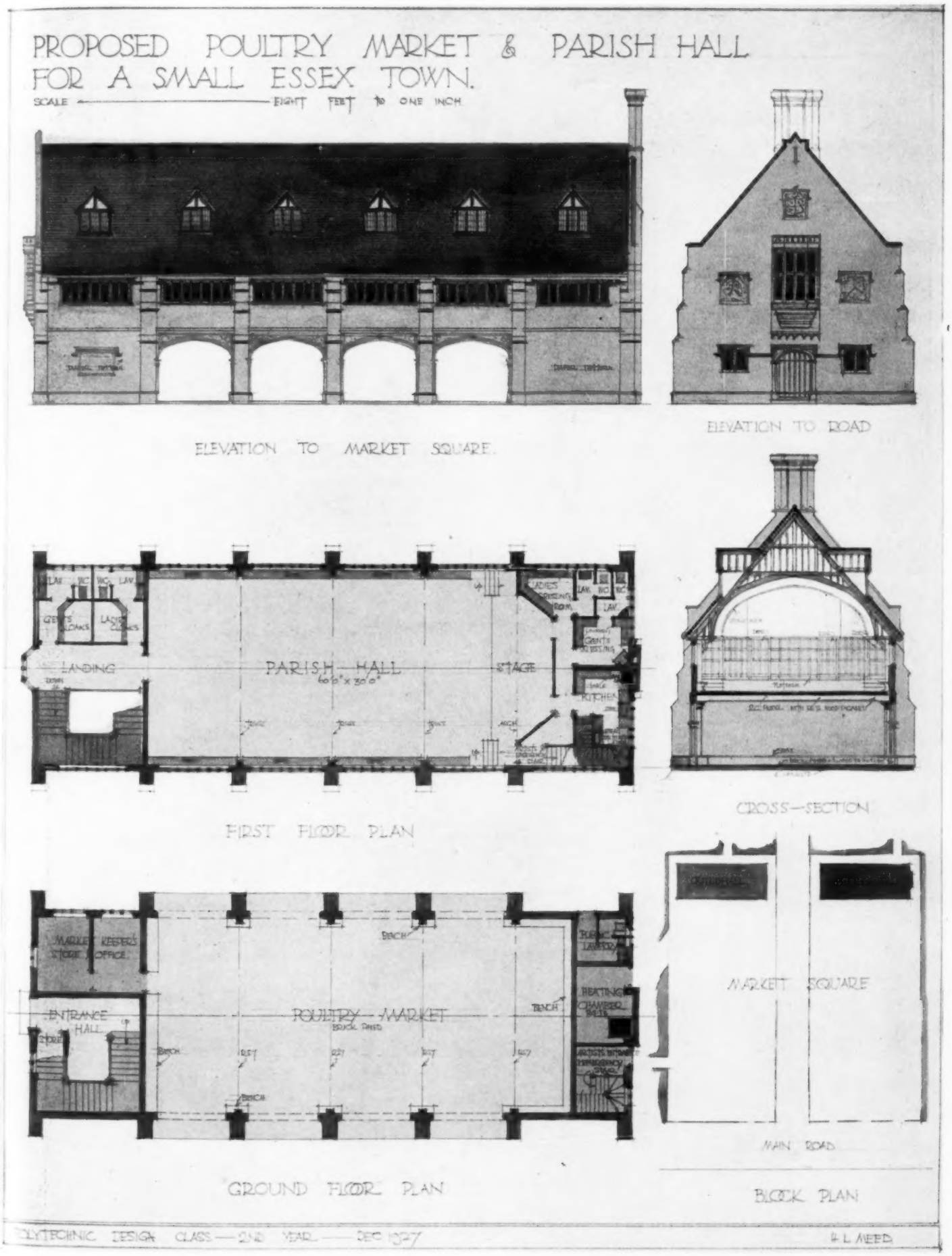


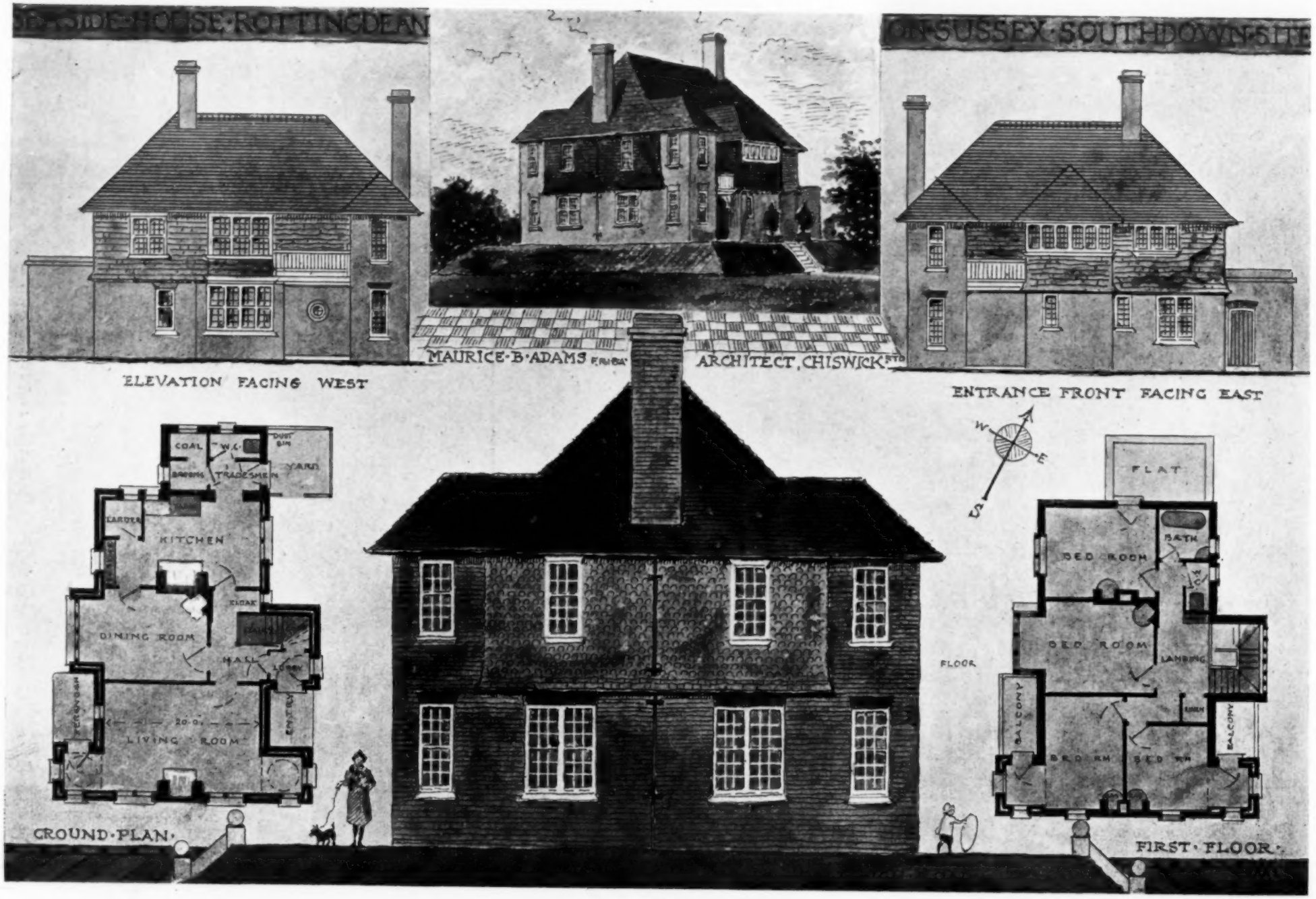
Proposed Bathing Pool, Brighton.

Mr. David Edwards, M.Inst.C.E., F.S.I., Borough Engineer and Surveyor.



Design for Poultry Market and Parish Hall.

By Mr. H. L. Meed. (Second Year Design Class, Polytechnic School of Architecture.)



House at Rottingdean, Sussex.

MR. MAURICE B. ADAMS, F.R.I.B.A. (retired), Architect.

SOCIETIES AND INSTITUTIONS

NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS.

Arranged by the Norwich Museum Association in conjunction with the Norfolk and Norwich Association of Architects, a lantern lecture on "Architecture in Ancient and Modern Greece" was recently delivered at Norwich by Mr. E. P. Mawson, F.R.I.B.A. The Lord Mayor (Mr. H. E. Witard) presided, and there was a large attendance.

The lecturer divided his address into three parts and spoke under the headings of Ancient Greece, Modern Greece, and the Modern Greek. The student of political economy, he said, instinctively turned to the sunny clime of Greece, and Athens in particular, as the birthplace of successful democratic government; the archæologist and architect for inspiration on matters of proportion and refinement; the painter and the sculptor for the precedent of their art, while the poet would seek Homer's Iliad and the Odyssey as the fountain head of epic poetry. The philosopher went to the Greeks for logical reasoning. The linguist found in the ancient language super refinement and lucidity of expression. The problems facing the modern city planner of Athens were unique in their importance, their interest and their possibilities. They were unique in this respect also, that any failure would bring against the planner the hearty condemnation of every lover of Athens—and rightly so. The lecturer described the town planning work undertaken at Athens and Salonika, and spoke of the humility with which he and his co-workers approached the task, feeling, as they did, that the eyes of the whole civilised world would be upon them.

After dealing with the re-planning of Salonika, the lecturer said that, speaking generally, the Macedonian and the Greek peasant were alike very primitive, and watching them, one could easily drop 1900 years and picture oneself as living in the time of St. Paul. The same applied in some measure to the northern part of all Greece.

A vote of thanks was accorded the lecturer on the motion of the Lord Mayor.

Mr. E. T. Boardman, who seconded, remarked that they wanted a new Town Hall in Norwich. They wanted a little enthusiasm among the people so that they should have something worthy of Norwich, and Norwich was no mean city.

COLLEGE OF ESTATE MANAGEMENT.

The Landlord and Tenant Act.

Lecturing at the College of Estate Management, Lincoln's Inn-fields, W.C.2, on Tuesday, January 31, Mr Graham Mould, Barrister-at-Law, dealt with Part I. of the Landlord and Tenant Act, 1927, which comes into force on March 25 next. This part of the Act applies to business premises held under lease, the two main objects being to secure for tenants compensation in respect of improvements or of goodwill, and, in certain cases, to give the option of an extension of the lease. The lecturer said that the trend of legislation in regard to landlord and tenant always seemed to be in the direction of narrowing freedom of contract and of improving the position of the tenant. The corollary was that improvement in the position of the tenant must inevitably be at the expense of the landlord. He did not complain of that, because there were far more tenants than landlords. The speaker then explained in detail the Sections of Part I. of the Act, and pointed out that under Section 1, where a tenancy was determined by notice in writing the tenant had to make a claim for compensation for improvement within one month after the notice had been served, and that applied whether the tenant served a notice on the landlord, or *vice versa*. In the case of tenancies terminating by effluxion of time, the claim had to be made not more than 36 months or less than 12 months before the end of the tenancy. In no instance was the sum to be paid as compensation to exceed the net addition to the value of the holding; neither should it exceed the reasonable cost of carrying out an improvement.

Under Section 2 the tenant was not entitled to compensation in respect of any improvement made before the coming into force of the Act, or to improvements made in pursuance of statutory obligations or of a contract entered into, whether before or after the passing of the Act, for valuable consideration. The latter the lecturer took to mean, as a Frenchman once put it, that "all the reciprocity was not to be on one side." Where an offer of renewal of the tenancy by the landlord had been accepted by the tenant, the rent fixed by the Tribunal would be that which the Tribunal thought a willing lessee other than the tenant would agree to pay, having regard to the terms of the lease, but irrespective of the value attributable to the improvement in respect of which compensation would have been payable.

The third Section, said the lecturer, represented a small concession to landlords, because where the tenant intended to make an improvement he had to serve written notice of his intention on the landlord, together with specification and plan. It was always a hopeful sign of such Acts that the worthy ranks of the surveyors on the one hand and of lawyers on the other did not entirely escape recognition. With regard to the powers of the Tribunal, he had never known any Act which left anything and everything concerning fact so completely in the hands of a Tribunal.

As to Section 4, which dealt with compensation for goodwill, the lecturer emphasised the fact that where a tenancy was terminated by notice to quit, the tenant could only claim compensation for goodwill if the notice was served on him. He could not claim compensation if he gave notice to the landlord. It was laid down that the sum to be awarded as compensation for goodwill should not exceed such addition to the value of the holding at the termination of the tenancy as might be determined to be the direct result of carrying on of the business by the tenant or his predecessors in title.

REGIONAL PLANNING.

A LECTURE was delivered by Mr. Longstreth Thompson, F.S.I., A.M.I.C.E., at the College of Estate Management, Lincoln's Inn Fields, on January 17. The lecturer said that although local authorities had been slow at first to take advantage of their powers to prepare town-planning schemes, and not more than three such schemes were actually approved during the years 1909-19, very real progress had now been made. At present 395 local authorities were actually concerned with town-planning schemes, and 625 such schemes had been approved or were in course of preparation. Such a result was quite satisfactory.

The question of regional planning, in which several authorities combined, came to the fore as soon as it was recognised how in a single town-planning scheme the object of the promoters might be thwarted by the action of other people close to their boundary though just outside their area. Authorities, therefore, got together in groups to prepare a common framework, and co-operated in schemes which they thought desirable for the whole area. Additional powers were necessary to carry on regional planning—or joint town planning, as it was sometimes called—and these were given in the Town Planning Act, 1919. The number of joint committees of local authorities which had been formed was 53, comprising 836 local authorities and covering an area of nearly ten million acres and a very large proportion of the population of England and Wales. The size of the regional committees varied considerably from the largest, which was Greater London, including 126 local authorities and covering an area of something over a million acres, to the smallest, which was that of Worthing and district, embracing three local authorities and covering 15,000 acres.

After pointing out the many considerations which had to be taken into account in the development of a scheme, the lecturer referred to the housing scheme which the London County Council had undertaken at Becontree. Of all places, he said, that was the worst that could have been chosen for such development. All the lines of transport in the direction of Becontree were hopelessly overcrowded, and it was very difficult to increase the facilities. The people for whom Becontree provided were known as "black-coated" people—that is, clerks and others who journeyed to business every day—whereas housing was really wanted for dockside people. Moreover, Becontree occupied the site of market gardens, which had been wiped out in consequence, although market gardening land was certainly not the best kind of land for housing. That was one of the things which might have been prevented if some broad policy had been framed for the disposition of such places as Becontree.

MODERN COTTAGE CONSTRUCTION.

IN a lecture on this subject, delivered at the College of Estate Management, Lincoln's Inn-fields, on January 10th, Mr. T. Alwyn Lloyd, F.R.I.B.A., said that the most satisfactory styles of cottage construction were those based on and following traditional methods. In most parts of the country, brick walls, timber floors, and roofs covered with slates or tiles were still the most economical and suitable provision. All sorts of alternative methods of construction had been put forward of late years, and it had been claimed for them that they solved the problem of cheap building. An enormous number of cottages had to be erected during the years 1919 to 1922, when there was great shortage of labour and materials, and then the improvisation of new or alternative methods of construction was reasonable enough. Of steel houses he had not had actual experience, but after full inquiries he believed that both as regards maintenance and the convenience of tenants they were not a feasible proposition as permanent buildings in such a climate and on such sites as those usually met with in Great Britain. He had had experience of concrete walling, and had found it, on the whole, satisfactory, though not notably cheaper or better than brick construction.

With regard to masonry, it was very natural to want to build cottages in local stone, but, unfortunately, during recent years, the cost of working stone had been so high that even when one got the stone for the cost of carting it was still cheaper in the stone districts to build in brick. Nevertheless, in situations like the Cotswolds, if one's clients could be induced to pay the additional cost, it was very desirable to build in local stone.

In speaking of the flooring of cottages, the lecturer described linoleums as the most appalling covering of a floor from the architect's point of view. If tenants covered the whole of the floor up to the skirting with linoleum they were almost certain to get dry rot in a few years' time. One way of diminishing the use of linoleum was to make a floor of such material that the tenant could keep it clean and tidy without this covering. In France and Germany no one dreamed of putting down linoleum where a hard floor was provided, and it was only a question of time before linoleum would be eliminated here also.

The speaker gave some figures as to the costs of modern cottage construction. He said that cottages could be built to quite reasonably good specification at from 10½d. to 1s. per cubic foot, or 11s. per square foot, which would work out at something like £420-£430 for the non-parlour type and £500 for the parlour type, with an addition of perhaps £20 in each case if built in London.

THE REPAIR OF ANCIENT BUILDINGS—VIII.

By A. R. POWYS, A.R.I.B.A.

DEFECTS IN MASONRY, BRICKWORK, AND WALLS GENERALLY, WHICH ARE DUE TO UNBALANCED THRUSTS, TO "DRIFT," AND TO BAD BUILDING UP OF MATERIALS.—*continued.*

Repair by Permanent Props—Buttresses.

It is a common practice, when a wall is seen to be weak or leaning, to recommend the building of buttresses, and it may be that this is sometimes desirable. But there are disadvantages in this way of strengthening buildings. First among these is the fact that the original form of the building will be altered thereby; and as the object of repair works is to preserve complete a work of ancient art and craftsmanship, such additions should only be made when the building to be repaired is shown to be defective for want of these features, and not because the walls are badly built or have become defective. It is a rule that buildings should always be repaired by strengthening the walls rather than by adding to them. The case of a ruined building, or one which has lost important constructive features, is different, for in these cases it does sometimes become necessary to build additional supports to take the place of what has gone.

There are also structural difficulties in building a new buttress, which, although they can be overcome if proper precautions are taken, render the avoidance of these features desirable. It is constantly repeated, and as often in practice forgotten, that a new buttress set on virgin soil will settle considerably, and in doing so will either move away from the wall it is built to prop or will hang from it by the bonding stones which unite it thereto. In the one case the buttress is useless, in the other it is an additional burden to the wall. The examination of buttresses built under these circumstances will seldom fail to show movements of the kind described here.

If, then, it happens that external support by buttressing is thought desirable, certain precautions are necessary. First, the foundations should generally be made on the same bottom as that on which the building stands, so that movement originating there may be uniform. A widely spread concrete footing is usually very desirable. There are two forms of buttresses, the one attached to the supported wall throughout its height, the other an arched or flying buttress. When an attached buttress is chosen it should be built in quickly-setting mortar, that is, in cement rather than lime mortar. The bondstones into the old wall should be built in independent and clear of the new buttress, though in the same plane, and should be of stone or of concrete which will withstand great shearing stresses. Standing on the new work, and beneath the new bondstones, at each stage powerful jacks should be placed, and screwed up from time to time, so that the new buttress may be compressed under the actual weights it will have to take when complete. These jacks should be left in and screwed up as may be necessary until settlement in the new work may reasonably be held to have stopped. Then, and not till then, the jacks should be removed, and their position taken by solid walling, properly pinned up from the new work to the bondstones.* One other precaution should be taken within the wall itself. It should be ascertained that the walling about the bondstones is sound and strong enough to pass from the whole weight of the wall on to the buttress.

An advantage of the flying buttress is that by its very nature it will lean against the wall to be supported even if the foundations on which it stands do subside a little. Such a buttress, unlike the other kind, is best built in lime mortar, so that it may be able to adjust itself during the months of setting, which is the period when movement in the foundations will, if ever, principally occur.

Other forms of permanent shoring should also be considered here. The well-known arrangement, including an inverted arch which stands beneath the central tower in Wells Cathedral, is little else than a permanent shore, designed on the same principle as those temporary timber-straining pieces which are so often used to support one wall or building from another during building operations. With such precedent before us, it may sometimes be well to consider building such support again, but in doing so it is not necessary to adopt for these the same features which are used at Wells, or in the chancel transepts of Salisbury Cathedral. Indeed, these forms, though fine and reasonable as examples of technical skill in the mediæval tradition, might justly be described as clumsy if carried out to-day. In such circumstances, other lighter but equally efficient constructions may possibly be wisely designed and employed.

There is yet another form of permanent visible support which may be used, namely, iron tie-rods and timber-beams. Elsewhere I have pointed out that mediæval builders preferred to put their structural members in compression rather than in tension. Abroad, such members are comparatively common, and there are well-known instances in England where tie-rods and tie-beams were used. At Westminster Abbey the original iron tie-rods remain at the springing level of many arches to resist their spread. Professor Lethaby tells us that the Chapter House vault was in the thirteenth century held in place by these means. Many roofs were designed with tie-beams, though the large timbers that were used in this position suggest that they were also designed to resist compression and to act as straining pieces also. We know well the advantages of such tensional members, but in the repair of old buildings we tend to be shy of their use. The Westminster arch-ties are stout iron bars, square in section, made with eyes at the ends to pass over hooks built into the masonry as the work rose up. When such rods are inserted into old buildings it is well to see that the hooks are of rustless metal, on the accepted principle that iron and steel should as far as possible be excluded from old walls.

Cob and Clay-lump Walls.

Cob and clay-lump walls are difficult to repair. These materials are not lasting unless certain conditions are observed, and these should first of all be examined and put right. These walls must be well roofed, and the roofs should have well projecting eaves. The exposed wall faces must be protected from weather, either by plaster, by repeatedly applied coats of limewash, or sometimes by tar. When a clay-lump wall has become decayed it may be repaired by removal of the defective lumps and by the insertion of new. When a cob wall is decayed the case is not so simple, because freshly made cob cannot easily be made to adhere to the old, and because when the old is cut out and new cob inserted it cannot be rammed in tight as underpinning is done, and, further, it shrinks very considerably when drying out. A cob wall may be repaired by cutting out the decayed part through the thickness of the wall, by arranging an even bed to pin up to and by rebuilding the opening with dried lumps specially made in the same manner and from the same material as was the wall.

Half-timber Walls.

Oak-framed walls are generally known as "half-timber work," though they deserve equally to be known as "timber and brick" or "timber and cob" work. The repair of timber framing is discussed elsewhere, but it is not out of place here to refer to the filling between the framework.

The variety of the filling found in timber framed buildings seems to be due to changes in the material available for the purpose, and the convenience with which they were used. It is a matter closely related to building economy, as, indeed, are all changes of method and material. Originally it was general to fill these spaces with wattle and daub, a material which has not great lasting qualities when exposed to weather or hard wear, but which could in old days be easily renewed with but little cost. When bricks came into general use this material supplanted wattle and daub, both in repair work and in new building. As a consequence, we find to-day both methods in use in one building. Sometimes the upright timbers had less thickness than bricks, and in such cases, when repair with brick was done, they were allowed to project clumsily beyond the framing; but because the bricks used in these repairs are often of a fine quality, both as regards their texture and colour, they should not be removed. It is very seldom necessary to remove and rebuild brick filling for repair; it should be the object of those concerned to make the wall sound without doing so. Brick filling that has moved out of position can be pressed back into position, though to do this it may be necessary to clean and remake the joint between brick and timber. This joint may be made with mortar, but it has been suggested by Mr. F. W. Troup that the joint could sometimes be re-made by using caulking, as is done between the planks of a ship's deck. This method would have the advantage that such a joint will expand and contract enough to allow for the slight swelling and shrinking of the timber during changing climatic conditions. Although most people know that the custom of building brick filling diagonally was done to encourage the bricks to press tightly against the timbers while the mortar was still soft, there are still some who imagine this custom is derived from a desire to add interest to the appearance. With this knowledge it is easier to resist the temptation which some repairers have, to make patterns in the brick panels they renew instead of maintaining.

External Plaster on Timber-framed Buildings.

In the eighteenth century it became the fashion to apply lath and plaster to the outsides of timber-framed buildings. This was done for two reasons. The first was due to the greater standard of comfort enjoyed then, for timber-framed buildings are apt to be draughty, and everyone knows a brick wall only four and a half inches thick does not keep rain out. The second reason seems to have resulted from the fashionable outlook of that day in regard to old work. It was little respected. Half timber work seems to have been regarded as a poor way of building, and was covered with plaster because, thus hidden, it did not show, or at least did not display, this supposed sign of social inferiority. Much of the plaster work applied for these reasons was of excellent quality and was often well modelled and patterned. Further, it hid the changes that were made at about the same time in the shape and sizes of the windows. It is a mistake to assume that the plaster should be removed and that the building should be restored to its older form. With the removal of plaster a variety of difficulties arise, much "restoration" usually follows, with the disagreeable results we are accustomed to associate with similar work done in the nineteenth century or with the imitation Tudor architecture of the Earl's Court and Wembley exhibitions. Plaster should be removed from these buildings when it is valueless as an example of craftsmanship, when it is harmful to the structure or when it must be removed to enable repairs to the timber framing to be done. The difficulty of keeping wind and water from driving through these walls is further evidenced, for other means also were commonly taken to keep them out. Both

* I think this method was first used by Mr. Wm. Harvey.

weather-boarding and tile-hanging are often found on such buildings. In every case it is wiser to approach the problem of repair with a strong prejudice in favour of these coverings than with a conviction that because they are later work than the framing they should therefore be removed.

When it is desirable to maintain the old lath and plaster on timber-framed buildings, either because of the fine modelling or for other reasons, and when this plaster is bulging or loose because either the lath or the lathing nails have decayed, the following method may sometimes be used with success. The plaster may be screwed back to the upright timbers or to smaller crosspieces specially inserted from the back between them. The screw-head is not big enough to hold the plaster alone and secure a grip of it; zinc or copper washers about the size of a penny should therefore be counter-sunk into the plaster and screwed up. Brass screws may be used. If a patch has bulged very much, care must be taken not to crack it when it is again pressed home to its original place. The counter-sunk screws are covered with plaster and so do not show. Further, it is possible, when the plaster is pressed back into position, to reinforce it from behind with a new plaster backing strengthened with canvas and fixed to the stud work as is done in the case of valuable modelled ceilings.

Tile-hung Walls.

Like plaster, the tiling of wall faces should as a rule be maintained. And this is no difficult matter, for this work is done in much the same way as when tiled roofs are repaired. Care should be taken in regard to those new tiles that may be wanted: these should be made by hand in the same way as the old and of the same size and shape.

An uncommon form of tiling was sometimes used in the south-eastern counties of England in the late-eighteenth and early-nineteenth centuries, namely, a tiling designed to look like brickwork. Where this work exists it should be repaired and new tiles made to take the place of deficiencies. The accompanying sketch (Fig. 7) will illustrate the form of tiling. It is usually found in conjunction with a "brick-nogged" wall, and the tiling nails are driven into the brick joints and into the timbers. On a vertical wall this tiling forms an excellent protection from the weather, and being properly bedded in mortar and without exposed edges it cannot, like ordinary tiling, easily be damaged by a ladder carelessly set against the wall face.

The repair of weather-boarding also deserves some mention. It is a safe rule that the form of weather-boarding that is found should be again adopted when renewal or repair is done, unless it is such as will encourage decay in itself or in the framing which carries it. Not very long ago painted deal boarding was almost invariably condemned, not because it was decayed but in the belief that it was incorrect or ugly, and a fashion arose to substitute for it weather-boarding of elm on which was left the irregular edge often with the bark still on it. It is a pleasure to know that this fashion has now died out, though unfortunately the suburban builder still follows the bad example that was set. If there is no reason why other forms of weather-boarding should be chosen, oak, chestnut, and elm are good for the purpose, but in all cases the boards should be cut straight. This was the old custom in all old woodwork except where even the cost of an extra saw cut was a waste of money, as in the meanest farm-buildings, pigstyes, etc.

The lighter kinds of slate hung on wall faces were and are used to withstand rain. At Ashburton in Devonshire there are beautiful examples of slate-hanging patterned with shaped and coloured slates deserving most careful preservation. But old walls which have been covered with the large thin smooth slates may be stripped and the walls made rainproof by some more appropriate means.

FIG. 7.

"THE BUILDER" DEBATE

II.—MINIMUM SALARIES FOR ARCHITECTURAL ASSISTANTS.

SIR,—I thought I had made it clear in my first letter that the case for minimum salaries for architectural assistants and that for a minimum scale of charges for practising architects are entirely different in principle and substance. It is, however, quite evident that I have not been sufficiently explicit, at any rate, for the comprehension of my opponent. I look upon this particular point as of primary importance, because the essential difference between the two principles does not lie right on the surface, and is therefore too often passed over by those who are not given to thinking very deeply into a subject. It is also one of the main planks of the platform adorned by the supporters of a minimum salary for assistants, and therefore a good point of attack.

The duties of an assistant cover a very wide field, ranging from comparatively menial duties—such as taking 'phone messages, running responsible errands, tracing simple drawings, and holding the tape—through more intricate duties up to the practically complete control of jobs. In a vast number of cases, where the practice is small and fluctuating, it is really only the simpler duties which the principal requires to be done for him; and these simple duties are simply not worth to the practice anything like £3 per week. If they were, it would be a luxury for the poor, harassed practitioner, and one which he would have to forego by dint of much midnight oil. I can see no reason in the world why, if an assistant is capable of doing no more than these simple duties, and if these are all that are required of him, a bargain should not be struck between master and man, involving a salary proportionate to the real value of services rendered. The partially competent assistant has a real value to a practice.

The case for a minimum scale of charges for the practising architect is entirely different. If he is competent, he is worth his 6 per cent. If he is not worth his 6 per cent. he is not competent. If he is not competent, he is a danger to the public if allowed to direct and control the intricate processes of building. There is no partial or "half-way" service which the practising architect can render for the good of building and of the public in general, and therefore there is a clear case for a minimum scale of fees.

The architect needs no protection against the incompetent assistant, since he is quite capable of detecting his deficiencies and of assessing his real value. The public, on the other hand, does need protection against the incompetent architect, since the public has no trained judgment to guide it in the matter, and no means of detecting deficiencies other than by bitter and costly experience. The two things are surely as wide as the poles. Sauce for the goose may be sauce for the gander, but not necessarily for the goat or for the giraffe.

"Negative" asks: "Will 'Positive' state the reason why their establishment [of minimum salaries] can be logically withheld?"

Certainly; though I must confess that my first letter was designed to set forth nothing but the reasons why I consider the establishment of minimum salaries should be logically withheld. I am sorry I have not "got it across," as the Yankee says, and will briefly recapitulate these reasons, which appear to me to be quite sound, and which "Negative" will no doubt admit formed the substance of my first letter upon the subject.

They are as follows:—

(1) Because I believe that in a free and unrestricted market, labour, like goods, finds its own natural level of value, in accordance with the conditions ruling at the time.

(2) Because assistantship itself is not a career, but a training for a career.

(3) Because the principle of minimum salaries ignores the value of the training an assistant gets by carrying out his duties.

(4) Because, in many small practices, the employment of an assistant at more than a figure below the minimum would be an economic impossibility.

(5) Because a number of men of limited capabilities, but useful in a limited way, would be thrown out of service.

(6) Because a number of lads of the wrong sort would be tempted to enter the profession by the false promise of a certain living.

(7) Because the experience of a large office would be closed to a number of young men anxious to have it.

(8) Because this sort of regulation must tend to destroy the good will and fair dealing which exists generally between architects and their assistants.

(9) Because evidence of sufficient distress to warrant the measure is lacking.

With regard to the point that such a number of chartered architects are themselves assistants, and working for low pay, proves, to my mind, less that there is a lot of talent insufficiently rewarded than that diplomas are too easily earned in these days. To argue the point would be an unjustifiable digression.

"Negative" mentions the fact that there are a number of assistants who supplement their salaries by spare-time practice, and suggests that it would be well worth the while of the practising architect to put a stop to this practice by raising the wages of his assistants, and so diverting commissions into his own pocket. The suggestion does not seem a particularly worthy one, and I do not believe for one moment that it really reflects the state of mind of my opponent. I rather suspect that it was just an attempt to come down to the level of the grasping practitioner, and if so, I assure him he is guilty of an injustice. The average architect is glad to see his young assistant taking a first step to independence, and, far from begrudging him his good fortune, he knows full well that he is all the more efficient after a taste of direct responsibility.

Even if he did wish to check him, how could he possibly achieve his object by raising his salary, I should like to know? Surely the architect will continue to take each and every job that presents itself, whether he be in practice or an assistant, unless he has reached that stage of affluence under which he can afford to pick and choose. I presume "Negative" does not contemplate a scale of salaries which would put the assistant in this class.

"Negative" chooses to assume that incompetence thrives under the present system, and that it must disappear under that system he supports. I think he is confusing full competence and partial competence, and ignoring the value of the man who can do well up to a limit, but one beyond which he is of little use. Such a man has a useful place to fill, and he can fill it very well; but he must go if the system advocated comes into being. The utterly incompetent cannot exist under any system whatever, unless "Negative" contemplates a parallel system of compulsory employment.

Borrowing "Negative's" closing words, and thanking him heartily for them, I hope, indeed, that I "forget nothing," and fear, indeed, that "I learn nothing"—from "Negative," at all events.

Positive.

St. Peter's, Piccadilly-circus.

St. Peter's Church, Great Windmill-street, Piccadilly-circus, is not to be demolished, in spite of the fact that a business firm is said to have offered £40,000 for the site in Great Windmill-street, adjoining the Trocadero Restaurant, on which the church stands. Over 8,000 people signed a petition for the church's preservation, it being represented to the bishop that it was used by hundreds of people daily.

MINIMUM SALARIES FOR ARCHITECTS' ASSISTANTS

An open meeting for the purpose of "protesting against the policy, or lack of policy, of the Royal Institute of British Architects concerning the salaried members of the profession, both within and outside the members of the Royal Institute," was held at the Caxton Hall, S.W.1, on Monday evening last, under the auspices of the Association of Architects, Surveyors, and Technical Assistants.

In opening the discussion, Mr. James Grieve, A.R.I.B.A., said it was not their wish to interfere with the internal affairs of the Institute, but a very large proportion of the members of the Institute were salaried members of the profession, and quite a number of them were also members of the Association. The Association had already been recognised by the Institute as representing the salaried members of the profession. The Royal Institute had further admitted the desirability of introducing a scale of salaries for the whole of the members of the profession who were on a salaried basis. The fact that this was admitted was proved by the Royal Institute discussing the question with a representative of the Association; that showed that the Association represented a body of architects whom the Institute did not at present represent. The Institute had admitted its belief in a scale of salaries, but there it stopped. It was no use for the Institute to admit the rightness of something and do nothing further. The object of the present meeting was to turn that belief to the Institute into action. Everybody to-day admitted the reasonableness of a definite scale of charges for services rendered; the only exception was when the person in receipt of a scale of fees had to consider the granting of a scale for somebody else; and that seemed to be the position of the Royal Institute. The rulers of the Royal Institute demanded a scale of fees for themselves, and would not think of allowing such a scale to be done away with. If they demanded a scale for themselves, it was only reasonable that they should consider one for other people.

Mr. Charles McLachlan, A.R.I.B.A., then moved the following resolution:—

"That this meeting of salaried architects and architects' assistants protests against the action of the Council of the R.I.B.A. in failing to recommend to the members of the R.I.B.A. the adoption of the scheme of basic minimum salaries agreed between the representatives of the A.A.S.T.A. and the representatives of the Allied Societies' Conference, and against the continued policy of making the Institute a protective body for the benefit of the ruling minority, while ignoring the claims of the majority of its membership employed on a salaried basis."

In putting the resolution to the meeting, Mr. McLachlan said he had no feeling whatever of disloyalty to the Royal Institute, but it was rather his loyalty that made him feel so strongly that the Institute should move in this matter. And he was prepared to stretch his loyalty to the point of seceding from the Institute. They were there with no feeling of wishing to destroy the R.I.B.A., but to reform it. After outlining the history of minimum salary negotiations, the speaker criticised the methods adopted by other opponents of the measure to secure its defeat. Whenever a representative sub-committee from the Institute had met the A.A.S.T.A. representatives, a report, he said, favourable to minimum salaries had ensued. This had in each case afterwards been submitted without recommendation to the Allied Societies, who could not hear the A.A.S.T.A. representatives first-hand, and in each case minimum salaries had been misrepresented as standard salaries. Arbitration was offered by the A.A.S.T.A., but was not taken up by the R.I.B.A. Council. The arguments against minimum salaries were self-contradicting. There was no argument which could be urged against minimum salaries which could not equally be urged against the Institute scale of charges. The R.I.B.A. Council consisted, necessarily as a result of the by-laws, of a huge majority of practising members over salaried members, although the bulk of the membership of the Institute was salaried. That huge representative majority used the weight and income of the Institute to uphold the scale of fees and to keep the assistant salaried members down.

The resolution was seconded by Mr. W. H. Hamlyn, A.R.I.B.A., who said there was no provision on the part of the R.I.B.A. for advising on salaries or the control of conditions of employment of its members, or code of professional conduct as relating to employed members. The result was: (*a*) Members were forced to accept appointments as architects or assistants at the best standard of remuneration that could be obtained by individual effort; (*b*) members were in increasing numbers accepting posts as architectural assistants and draughtsmen to persons who were not architects; (*c*) the number of salaried members of the R.I.B.A. was increasing yearly. The difficulties of commencing private practice became correspondingly greater, and more men were forced into salaried employment. That process of strangulation was accelerated by the absence of action on the part of the R.I.B.A. The only remedy was co-ordination with one definite object—the betterment of the entire profession. To effect that co-ordination the Executive Council of the A.A.S.T.A. advocated the following constructive policy for the profession:—

(1) That the R.I.B.A. set up a Standing Committee to be known as the Salaried Members' Committee. Such committee to be formed of representatives of each section of the salaried members of the Institute, together with representatives of the private practising architects.

(2) That, broadly, the duties of such committee should embrace *inter alia* the following:—(*a*) Investigate conditions of employment of members of the R.I.B.A. (*b*) Set up, where possible, a guide to the salary which should be anticipated by members applying for official appointments and industrial appointments. Recommend the principle of minimum salaries for architectural assistants. (*c*) Scrutinise the conditions of employment advertised in the Press, and, where those were not in accordance with professional ethics, apply the same remedy as that adopted for unsatisfactory conditions of competition. (*d*) Adopt every possible measure to discourage the employment and exploitation of members by persons who were not architects. Where circumstances arose which made it impossible to prevent an architectural staff coming within the administrative department of a person who was not an architect, insist upon the title of "architect," with adequate pay, for the principal, and the title of "assistant architects" to those subordinate to him. (*e*) Expunge the term "draughtsman" from the nomenclature as applied to professional men of qualification. (*f*) Act in an advisory capacity to salaried members, in a similar manner to the procedure of the Practice Committee, to a private practising architect.

Mr. T. Braddock supported the motion, but pointed out that the R.I.B.A. had been put in a difficult position when the Association asked it to consider the interests of the salaried members only, for the Institute had also to consider the private practitioners. It was also necessary to apply the minimum salary to those outside the Institute of the Association: the criterion should be whether a man were worth employing, for if he were worth employing at all he should receive a minimum salary

in the interests of the remainder of the profession.

In reply to the suggestion that the minimum of £3 10s. a week laid down by the association as the proper rate for a student after four years' training, Mr. Hamlyn said they had great difficulty in getting even that figure.

The motion was then put to the meeting and passed unanimously.

The following motion was then proposed by the Chairman of the Executive Council: "That this meeting of salaried architects and architects' assistants endorses the action already taken by the A.A.S.T.A. to improve the remuneration and status of all classes of salaried architects and architects' assistants, including the establishment of basic salaries, and urges the Council of the A.A.S.T.A. to take active steps to secure their general adoption in the profession, and earnestly invites the support of all salaried chief and assistant architects throughout the country to such measures as the Council shall consider necessary."

The speaker said the Association thought the best way to remedy the trouble was to establish a Standing Committee of the Institute to protect the interests of salaried members generally. Such a committee would consist almost entirely of salaried men and would not confine itself to any one branch of salaried practice, but would deal with the matter on comprehensive lines and in the interests of the whole profession. The first step would be to authorise the official representative of the A.A.S.T.A. on the Institute Council to bring forward a motion for the establishment of such a committee. It did not follow that the Council would adopt the proposal; in fact, it was quite possible that the motion would be defeated. In that event, it was proposed that the next step would be to summon a special Business or General Meeting of the R.I.B.A., when the same proposition would be put forward and the salaried members of the Institute would have an opportunity of voting for its adoption. If it were carried, the Institute Council would then be compelled to set up such a committee, and its first duty would be to deal with the question of salaries.

Mr. John Batty, A.R.I.B.A., seconded the motion.

A discussion then took place as to the advisability of negotiating with the R.I.B.A. for minimum salaries for those members of the Association who were also members of the Institute only. Mr. Braddock expressed the opinion that, if this course were proceeded with, and minimum salaries obtained for salaried members of the Institute, it would be to their detriment; in his opinion, the result would be that those members whose salaries might be thus increased would probably lose their positions in favour of members of the Association who were not members of the R.I.B.A., and therefore did not come under the minimum salary agreement. The possibility of some assistants being employed at a lower rate than others would put a premium on second-rate workers.—To this point Mr. McLachlan replied that, as the Institute very definitely declined to enter into any negotiations which concerned all members of the Association (including those who were not members of the Institute), but was concerned with members of the Institute only, the Association thought it would be better to get what it could on behalf of that section of its membership who were members of the R.I.B.A.

In referring to the Architects' Registration Bill, Mr. Braddock suggested that the Association should inform the R.I.B.A. that unless it supported minimum salaries the Association would not support the Registration Bill. In that direction he thought the Association had considerable power, for unless the Bill contained a clause fixing minimum wages for the workers in the profession the Labour Party could not support it.

The resolution was then put to the meeting and carried unanimously.

LEGAL QUESTIONS WE HAVE BEEN ASKED—VII

By W. T. CRESWELL, Barrister-at-Law, L.R.I.B.A., Associate (late Fellow) Surveyors' Institution, etc.

IS THE "THIRD" SURVEYOR APPOINTED UNDER THE LONDON BUILDING ACT, 1894, AN UMPIRE?

FIRST it must be understood that a reference to two arbitrators and an umpire only occurs when it is expressly provided in the submission to arbitration. Each of the parties to the submission appoints an arbitrator, and the two arbitrators have power to appoint the umpire at any time during which their power to make an award is in force. Unless, of course, the submission itself requires them to appoint an umpire before entering on the reference, in which case they cannot proceed with the reference until they have appointed an umpire; and if they do so their award will be invalid.

The function of the umpire is to decide the dispute independently, and in lieu of the arbitrators, if they fail to come to a decision. He is not appointed to settle the differences of the arbitrators, but those of the parties, unless the submission otherwise provides.

In the Metropolis, if one of the parties owning in common a party or party-fence wall contemplates some work involving the structure of such wall, and under Section 90 of the London Building Act, 1894, he, as "building owner" sends to the "adjoining owner" a notice of his intentions, the latter may assent thereto or serve a counter-notice or requisition on the former. On the failure of either party to assent within fourteen days, a difference is deemed to have arisen in respect to their rights under the Act as to the wall in question.

"Building Owner" and "Adjoining Owner."

The term "building owner," as used in the Act, signifies one who, being the owner of a building which is separated from another building by a party or party-fence wall, is at the time desirous of doing something to that wall which amounts to any interference with it. (See Lewis & Solome *v.* Charing Cross, Euston and Hampstead Railway Co., 1906, 1 Ch. 508.) It follows that the "adjoining owner" is the other owner; and this second term includes, in effect, every person holding an interest in the adjoining premises other than tenants from year to year, or at will. (See Crosby *v.* Alhambra Co. Ltd., 1907, 1 Ch. 295.)

Arbitration.

Under Section 91 of the Act, all differences between a "building owner" and the "adjoining owner" must be settled by arbitration; and unless both parties concur in the appointment of one surveyor to settle their differences, it is provided that they shall each appoint a surveyor, and subsequently the two surveyors so appointed shall select a third surveyor to form with them a triumvirate.

Jurisdiction of Arbitrators.

The jurisdiction of the three surveyors or co-arbitrators so appointed is continuous, and lasts until such times as all matters in dispute between the "building owner" and the "adjoining owner," and which arise out of the original action given by the former, and the counter-notice or requisition given by the latter, are determined. Also in Selby *v.* Whitbread (1917), 1 K.B. 736, it was clearly enunciated, that the three surveyors or co-arbitrators have power to make more than one award, as circumstances require, during the period of their jurisdiction and until all matters involved in the original notice given by the "building owner" are finally adjusted. But when this is accomplished their jurisdiction ends. (See Leadbetter *v.* Marylebone Corp., 1904, 2 K.B. 893.)

The notice ought at the outset to be so clear and intelligible as to enable the adjoining owner to see what counter-notice or requisition he should give under the Act. (See Hobbs, Hart & Co., *v.* Groves, 1899, 1 Ch. 11.)

The Surveyors are all Arbitrators.

The three surveyors are clearly co-arbitrators, each having equal authority, and the third surveyor is not an umpire called in to determine the differences; for the section provides that "such one surveyor or three surveyors or any two of them shall settle any matter from time to time during the continuance of any work to which the notice relates, in dispute," and that an award given "by such one surveyor or such three surveyors, or by any two of them, shall be conclusive." This clearly provides for the equal judgment of all three on all matters, and they all act and act together, and should execute their award at the same time and place. The two surveyors appointed for the parties have no authority to treat the third surveyor as an umpire only to be called in at any juncture when differences arise between themselves.

When an umpire is appointed in an arbitration he sometimes sits, throughout the references, with the arbitrators so as to be well acquainted with the matter, so avoiding a second investigation on his part if called upon to act in lieu of them; thus saving time and expense. He has, however, should he so sit, no voice in any award they may make. Should, however, he not sit, if, and when, he is called upon to act, he should hear all the evidence afresh, and not rely on the notes taken previously by the arbitrators, even if the parties agree to his doing so. He should hear and see the witnesses for himself.

The functions of the "third Surveyor" under the Act differ therefore essentially from that of an umpire.

Architectural Tours Abroad.

The Secretary of the Association of Architects, Surveyors and Technical Assistants writes to call attention to the fact that the Association organises periodically tours abroad to places of interest to architects, etc., on a cost basis that cannot be approached by individual travel. This Easter, trips are being arranged to North Italy (including Milan, Como, Brescia, Verona, Vicenza and Venice) for 14 days at a cost of £16 16s., and to Paris for 5 or 12 days at about £5 5s. to £7 10s. Both trips are open to members of the profession as well as to others interested. Particulars may be obtained by application to the Secretary, A.A.S.T.A., 26, Buckinghamgate, Westminster, S.W.1.

Details of Cathedral Building.

Sir Banister Fletcher, F.S.A., F.R.I.B.A., lecturing at the Central School of Arts and Crafts, continued the subject of English architecture, and described the evolution of piers, from the stumpy, cylindrical pillar of the Normans to the shafted pier of early English and moulded pier of later times, illustrating by slides the various forms of bases, and carved and moulded capitals. Towers he referred to as one of the most beautiful creations of Gothic architecture, which formed the keep of the House of God, and spires, which were not due to a constructive necessity but were a concession to religious symbolism, afforded a contrast to the horizontal lines of the nave roof. The lecturer finally described the different types of open timber roof which, he said, bear witness to the excellence of English carpenters, and greatly enhance the beauty of many mediæval churches and halls of old England.

LEGAL SECTION

NOTES ON CURRENT CASES

Liability in Respect of Private Roads in Course of Construction.

IT may be of interest to call attention to a recent decision of the Court of Appeal in the case Coleshill *v.* Manchester Corporation, reported in the *Times*, January 24, 1928, where Lord Justice Scrutton said, although the facts were simple, questions were raised on which the authorities are by no means clear. The Manchester Corporation were developing a building estate, and in connection with that operation were constructing a road which was a *cul de sac* about 260 yards long, ending at the open end upon a highway. It was admitted that this new road was not a public highway. The road was to be 50 ft. wide, 24 ft. being carriageway, and with two grass footpaths which had been kerbed. The road had been levelled at the entrance from the highway, and in other parts, but it was not a completed road, and the surface was not finished. The Corporation was building houses on the north side of the road, none of which were yet occupied. The land on the south side also belonged to the Corporation, but was not yet being built upon, and it was divided from the road by a two-bar fence. South of this land was the golf links, which had public footpaths across it. One of the top bars of the above fence was broken, and the field could be entered by stepping over the remaining bar, and a good many people had gone through this gap, making it a short cut to the golf links. The Corporation, if they knew of this practice, had done nothing to stop it. The lighting of the road had not been installed. A trench had been cut across the roadway to lay an electric main, and some two cubic yards of earth had been thrown up from the excavation somewhere in its vicinity.

In these circumstances the plaintiff, who was walking with a young woman on September 5, seeing people coming up the short cut, had walked down the road about a quarter of an hour before sunset and had gone to the golf links and, returning through the gap in the fence and entering the road after 9 o'clock, when it was becoming dark, he had fallen into the trench and sustained injuries, for which he was suing the Corporation. The actual movements of the couple we find difficult to detail from the report, but the material fact appears to be that they had passed down the road in daylight, but the plaintiff alleged he had not seen the trench or the earth thrown up from it. At the assizes he was awarded £300 damages, and this was an appeal from the verdict and judgment.

In the first place, the Court of Appeal held it was clear that the plaintiff's position could not be placed higher than that of a bare licensee, adopting the definition of Lord Sumner, in Mersey Docks and Harbour Board *v.* Procter (1923, A.C. 253; *The Builder*, April 27, 1923), that the distinction between an invitee and a licensee is that in the case of the former, invitor and invitee have a common interest; whilst in the latter, licensor and licensee have none; and a licensee, who is a person merely permitted to enter, takes the premises as he finds them, with the one exception that the licensor must not lay a trap for him or expose him to a danger not obvious nor to be expected there under the circumstances. If the danger is obvious, the licensee must look out for himself. If it is to be expected, he must expect it and take his own precautions. The licensor must act with reasonable diligence to prevent his premises from misleading or entrapping a licensee. The question of what is "obvious" was dealt with by Lord Wrenbury in Fairman *v.* Perpetual Investment Building Society (1923, A.C. 74; *The Builder*, March 23, 1923), where he said that, primarily, a thing is obvious if a reasonable person using reasonable care would have seen it; but there are some things which a reasonable person is entitled to assume, and he gave the instance of a man using a staircase in perfect order in the morning, returning in the evening over the same staircase which in the meantime has been rendered dangerous.

Applying the above principles to the case in question, the Court of Appeal held that even if the plaintiff was to be treated as a licensee, and not a trespasser, there was no cause of action. The plaintiff had entered the road in daylight, and it was obviously an unfinished and unlighted road, and there was nothing in the nature of a representation of a safe highway nor anything which was known to the Corporation to be dangerous which the plaintiff could reasonably think not to be dangerous.

This case appears to us to raise points worthy of consideration by those laying out building estates and constructing new roads. It is a general custom to leave the ends of such roads, while uncompleted, unlighted, and there is an old case, Murley *v.* Grove (1875. 31 L.T. 360), to the effect that there is no duty on the owners of such roads to protect anyone using them without licence. But what is a licence? In the case under consideration, as we have said, the Court doubted whether the plaintiff was a licensee at all, but dealt with the case on that footing apparently because of the fact that with the knowledge of the defendants the road with the gap in the fence had been used as a short cut to the golf links. This was the only invitation. But in the recent case, Oldham *v.* Sheffield Corporation (1927, 136 L.T. 681), the Corporation were altering a *cul de sac* road connecting it with an existing highway: A wall forming the end of the *cul de sac* had been pulled down, and their contractors were making up the road beyond it to join the existing highway: They had put up a fence, but there was no watchman or light to indicate the fence, and a ravine existed beyond the fence and the existing highway. The lights, however, at each side of the existing highway gave the impression to anyone entering the *cul de sac* road that there was a continuous road and the driver of a motor-car entering the *cul de sac* did not see the fence, and crashed through it into the ravine. The place of the accident was not a highway but a private site, but the misleading line of lights were held by the Court of Appeal to be the invitation as representing a safe highway, and the plaintiff recovered damages. This case was distinguished by the Court of Appeal in the case under consideration.

The above cases show that great care must be exercised by those laying out roads on building estates which lead to public highways, and the precautions to be taken present some difficulty. *Prima facie*, it appears that there is no liability in respect of such roads unless some circumstances are present which can be construed into an invitation, but the cases show that that may be presumed from extraneous circumstances, such as the public having used part of the road as a footpath, or from some light on another road giving the impression it leads into another thoroughfare. These circumstances are not easy to foresee until an accident has actually occurred, and therefore the safest way would appear to be to block the entrances and light the obstruction; but here, again, there is a difficulty, for unless a night watchman is employed the light may go out, and the fact that the light was placed there, but allowed to go out, might be urged as evidence of negligence, and an admission that the road was such that in the absence of warning the public might be justified in considering it a safe road.

Landlord and Tenant: Grounds for Refusing Leave to Assign.

As in our recent articles on "Points in connection with the Law of Landlord and Tenant," we endeavoured to deal exhaustively with the question of assignments of leases and the grounds upon which consent to assign could be withheld, it may be of interest to note a case—Farr *v.* Ginnings (*The Times*, January 27)—decided since those articles were written.

The plaintiff was the lessee of a house under a lease for 21 years, which contained repairing covenants and a covenant by the lessee not to assign without the consent of the lessor, such consent not to be unreasonably withheld. In January, 1926, the plaintiff had been requested to carry out the terms of the repairing covenants, but the plaintiff had executed no repairs, and on October 18, 1927, the request had been repeated. On October 20 the plaintiff, through his solicitors, applied for leave to assign the lease to a named assignee. The defendant's solicitors replied that as twice they had called upon the plaintiff to carry out repairs and nothing had been done, the defendant could not consent to an assignment, but they suggested that the plaintiff might negotiate for a surrender.

The rent of the premises was £60 per annum and the estimated cost of the repairs £100. The plaintiff applied to the Court for a declaration that the refusal of consent was unreasonable and that the plaintiff was entitled to assign without consent.

The Court gave judgment for the plaintiff on the following grounds—the amount of disrepair was not very serious and there had been no pressure put upon the plaintiff to do the repairs as nearly two years had elapsed between the first and second applications; the plaintiff had taken no objection to the references given with regard to the proposed assignee as a responsible person and had been informed by the plaintiff that the proposed assignee intended to expend a considerable amount in putting the property into repair if he purchased the interest of the plaintiff in the lease; and the position of the defendant would not be prejudiced should the assignment take place, as she would retain her right to damages for breach of covenant against the plaintiff and also could compel the proposed assignee to put the premises into repair under pain of forfeiture. The declaration therefore was made in the terms asked.

The Court distinguished the case of Goldstein *v.* Sanders (1915, 1 Ch. 549), (a case we referred to in our eighth article as an authority on another point not touched by this case, viz., that such covenants run with the land) on the ground that in that case the condition of the premises had been found by the Court to be outrageous. In that case the assignee of the reversion of the head lease was seeking a declaration that a memorandum for an underlease had been determined by breach of covenant not to assign without licence and claiming possession of the premises as against an assignee to whom the memorandum for the lease had been assigned without licence.

There, as leave to assign to the defendant had been refused, the assignor (an assignee of the memorandum for the underlease) had made it without licence to the defendant, who was the owner of the adjoining house, and who, with the knowledge of the assignor, had made alterations in the premises in connection with the rebuilding of his own premises which adjoined, part of the garden having even been walled off and incorporated with the house of the proposed assignee, and other irregularities had been committed.

BRIDGES

SIR E. OWEN WILLIAMS, K.B.E., B.Sc., M.Inst.C.E., read a paper on this subject at the R.I.B.A. on Wednesday week last, as the fifth of a series of illustrated lectures on architecture for workers in the building trade. Of the works of mankind, said the lecturer, few were of greater material necessity than the bridge. Its significance had compelled its veneration, even worship. Without it we should be segregated and classified into less than watersheds. With it we passed lightly and equally over brook and chasm. Towns and cities had sprung up around it, and for its possession some of the greatest battles of the world had been fought. History, however, recorded that the bridge was a comparatively recent activity of mankind. Its story was the story of our present civilisation. He believed no mention of the word would be found in the Bible. The art of the Greeks hardly extended to it, not unexpectedly when it was remembered that in their time buildings, of spans of comparative insignificance to us, remained unroofed out of sheer constructional inability. Their unit of construction was the beam or lintel of stone or timber, severely restricting the limits of the bridge, which could only make its greatest leaps in other forms and other materials. The Romans, a race of engineers, developed the principle of the arch in bridges. They might be said to have stamped the arch as an almost synonymous term for a bridge and to have founded a tradition in bridge construction, falsely interpreted to-day that only a bridge which was made to look like an arch could be pleasing. In this country the Romans built numerous small bridges, principally of timber, and after their occupation, bridge and road construction was dormant for hundreds of years.

The frequent recurrence in place names of the suffix "ford," such as in Stratford, Wansford, etc., showed how recently this primitive means of crossing a river was in vogue in this country. Such bridges as were built were undertaken as hazardous and experimental enterprises, and when a bridge was persuaded, sometimes after many attempts, to remain, it became the mainstay of the community that gathered round it, and an object of wonderment to the country.

The great revival of bridge building, together with road construction, was witnessed at the beginning of the last century, principally engineered by Smeaton, Rennie, and Telford, but still the material was largely stone, and the type of construction the arch. Rennie might be said to be the last of the stone bridge builders, and Telford of the first of those who built in metal embodying principles other than the arch. The contrast might well be made as between Waterloo Bridge, the last of the great stone bridges, and Menai Suspension Bridge, the first of the modern metal type. As between the two types there was an entirely different conception of the nature of the bridge. In one, mass and weight were emphasised as though the object were to construct a solid rock, through which holes were driven for the passage of the water. In the other the bridge structure was conceived as a collection of forces clothed in metal with every desire and every reason to make the structure as light as possible. In a word it was strength as against mass. To reduce this to a comparison, the weight of Waterloo Bridge per square foot of roadway was about three times as much as that of the new 3,500-foot single span bridge being constructed over the Hudson River, New York, i.e., a single span more than three times the total length of Waterloo Bridge. To Telford must be given the credit of grasping this fundamental change of thought, and of utilising it so aptly as he did in the Menai Suspension Bridge.

But the impulse which had compelled a still greater vision of the bridge had come from the introduction of mechanical transport both on rail and road. The steel that made mechanical transport possible was at hand as the medium for the vaster and stronger bridges that mechanical transport demanded. Railway bridges of great span were constructed, the outstanding one being the Forth Bridge, with its spans of 1,750 feet. But these were new bridges for new purposes on new routes, and meantime road bridges were falling into decay and disuse. Then appeared mechanical road transport, compelling a reconstruction of the vast number of road bridges which exist in the world (averaging 1¼ to every mile of road), and adding to the problem by asking for new bridges on more difficult sites and of enormously longer spans. It was easy to understand the degree to which road bridges were chaotically outclassed when it was recalled that 20 years ago they seldom carried more than a wagon weighing a ton or so, whilst now it was clear that we must anticipate and prepare for trains of loads each of 20 tons or more.

Bridges had become classified into three main types, the arch, the beam and the suspension, with other subsidiary variations of these, but when each type was viewed with an appropriate section of the earth as a part of its system, they would all be found to have a common basis. When any piece of the earth (whether it be fashioned into a bridge by man, or whether it be an overhanging piece of rock or a natural arch) had a void between it and the surface of the earth, i.e., when it spanned an opening or projected beyond a vertical face, then two forces of nature were brought into play—compression which tended to crush material, and tension which tended to tear material. Every structure, whatever its type might be, had these characteristics. In the arch that portion built by man was in compression, in the suspension bridge it was in tension, in the beam it was both in compression and tension, but in the arch the necessary complementary tension was found in the lateral or horizontal forces which were put on to it by the earth, and in the suspension bridge the necessary compression was again found by the horizontal actions of the earth crust. Therefore the only difference between the three types was the extent to which they made demands on the earth. The beam was self-contained and only required vertical support; the arch and the suspension bridge not only required vertical support, but in addition horizontal support, i.e., in a sense they had to be "riveted" to the earth to prevent sideways movement. The extent of the so-called "riveting" fixed the nature of the bridge. However much a structure might look like an arch, if it had not got the necessary riveting, so called, then the earth would act on it exactly as it would on a beam, and whatever arch-like appearance it might have, it was then in reality a beam. A curved appearance did not make an arch nor a suspension bridge. Their types were solely determined by the nature of their attachment to the earth.

It followed in designing a bridge that the type should to some extent reflect the nature of the soil below, and for this reason types and forms of bridges were not a subject for fanciful imagination, but the result of the analysis of conditions, the principal one being the nature of the ground. Exploration by borings into the earth was, therefore, the first necessity before attempting the design of a bridge. In general, the nature of the soil was a factor which would eliminate or compel the adoption of certain types. The beam or any variation of it depended on vertical resistance of the earth alone, and could be designed so that considerable settlements had not the slightest effect on its security. The arch and the suspension bridge could not permit of any settlement or movement of the ground. In both cases movement of the ground would tend to make them into beam bridges, for which they were not proportioned, and danger or collapse would follow.

Summarising the types of bridges, the lecturer showed the gradual change from one to another, the true arch gradually flattening and getting more and more tension into it until it becomes a true beam, and then as the dip, or downward deflection got greater, became more and more a true suspension type. It was clear that the change from one to the other must be gradual, that a slight rise in a beam could not make it an arch, or a slight dip make it a suspension bridge.

He defined the true arch as being one in which the forces were entirely compressive and the whole of the tension taken up by forces in the ground, and it could be shown that this definition did not apply to arches flatter than one-sixth of the span. It was in this zone or region, i.e., for arches above one-sixth of the span, that stone and other non-tensile materials found their place, and practically all the arches of the ancients were of this character.

Arch-shaped structures with a rise or camber exceeding one-twelfth of the span, but not exceeding one-sixth of the span, would be found to have, in spite of whatever attachment they had to the soil, serious tensile stresses, and might be classed as semi-arches. Stone, brick and plain concrete were no longer useful, and we came into the region of tensile materials, such as reinforced concrete, steel and other metals.

Structures which were flatter than one-twelfth of the span would be found to have very serious tensile stresses, and when exactly horizontal, tensile and compressive stresses were equal, the true beam was reached, i.e., making no demand on the soil except for vertical support. With increasing dip the ideal suspension type was met, in which all members remained constantly in tension. Again, he would emphasise that mere shape did not determine into which category the structure would come. It must be shape, combined with the nature of its attachment to the soil, and its demand on the soil, that determined the type.

CHURCH ORNAMENTAL ART

SIR BANISTER FLETCHER, F.S.A., F.R.I.B.A., recently gave a lecture at the Central School of Arts and Crafts on the roof drainage, ornament, and fittings of mediæval times in England Churches, he said, supplied the place in social life as such institutions as schools, libraries, museums, galleries, and concert halls. Through the ever-open door people passed in and out, and the sculptures inside and sometimes outside set forth the Bible story and, with the aid of stained glass windows, proclaimed the lives of saints, the heroism of knights, and the valour of kings, and embodied the best craftsmanship of the age, symbolising often the virtues and vices. The lecturer pointed out how the mediæval craftsman devoted his skill to the carving of numerous church fittings. The intricate delicacy of the carved chancel screen was eloquent of the sacredness of the sanctuary beyond; while the rood, lifted high on the rood-loft above, proclaimed the sacrifice of the Saviour of the world. The richness of ornament concentrated on the reredos was a background for the holy sacrament of the Church, and it was flanked on either side by the delicate tabernacled work of the sedilia, piscina, and choir stalls. The change of style in these fittings from the early Norman to the late Perpendicular was shown by a large number of lantern views which presented the character of the ornament.

Roofing Felt for South Africa.

According to the Department of Overseas Trade, 35, Old Queen-street, S.W.1, His Majesty's Senior Trade Commissioner in South Africa (Mr. N. Elmslie) reports that the South African Railways and Harbours Administration are calling for tenders for the supply of roofing felt. Tenders are to be presented in Johannesburg by March 22, 1928.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

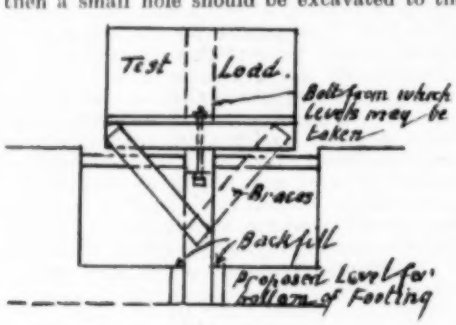
We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?— ED.

Testing "Made" Ground.

[REPLY TO "J.R.G.," FEBRUARY 3.]

SIR,—The following is a simple test for "made" ground recommended by Mr. C. L. Post, of Chicago. "The footing excavation carried down should be to within 12 in. or 18 in. of the proposed bottom of the footing, then a small hole should be excavated to the



required depth, and in this hole a 12 in. by 12 in. timber with platform attached should be placed. The post should be braced so that it will be held vertical without interfering with the vertical movement of the load. The space around the post at the bottom should be filled in and pinned to approximately the density of the original; this will tend to prevent lateral displacement of the soil under the post. The test load should be at least double that which is intended to be used for a working load."

The settlement can be determined with the level in the usual manner. This method has the advantage of mobility, the apparatus being easily moved to different points of the site.

CLERK OF WORKS

SIR,—"Enil" has given us a practical and reliable method of ascertaining the supporting weight of earth for building and engineering foundation work, but I think, having regard to the vagaries of the soil in even a lateral distance of, say, 40 ft., it may be added as a wise precaution with this test that trial holes should be sunk along the proposed lines of foundation work to verify there is no alteration in the structure of soil from that upon which the actual test has been applied.

H. PREECE JAMES, F.I.A.S., M.R.San.I.

Lighting of Picture Galleries.

SIR,—Have any of your correspondents tried the use of prismatic lenses, in conjunction with the top-side method of lighting, to throw the light strongly directly on the picture, and subdue it over the spectator? The method suggests itself as feasible, and I should be glad of the advice of any who have made a special study of the question.

PICTURES.

Stone Walling.

SIR,—What would be a fair price to pay in the Home Counties for rubble walling in old stones supplied by the employer, in gauged mortar? The district is one where stone walling has fallen into disuse, and it would be executed by a good bricklayer.

RESTORE.

Local Authorities.

SIR,—I should like to be advised as to what extent a local authority in England has power to waive its own by-laws, and to what extent the public can claim this discretion.

RATEPAYER.

Dampness in Bungalow.

[REPLY TO "READER," FEBRUARY 17.]

SIR,—Your correspondent states that the dampness makes its first appearance at the picture rail and spreads downwards. This points rather to faulty damp-proofing over the lintels of the windows, allowing contact between the outer saturated leaf of the wall and the inner leaf. There should be a lead or bitumen covering over all window openings, carried at least 6 in. on either side of same, and it is also desirable to have slates interposed down the centre of the lintel.

The trouble appears to be more general than this, however. The number of ventilators under floors is of less consequence than their position, and it is quite possible for a corner of stagnant air to set up the dry rot at first detected, which would be encouraged by the linoleum on the floor. The removal of this and renewal of the floor is not sufficiently stringent a measure if the rot has got a thorough hold. The whole of the underfloor should be treated with hot tar or corrosive sublimate, and the earth removed and burnt, or the remaining fungi will continue to germinate on the new work.

The case is a puzzle, and I should recommend your correspondent to employ a competent architect to investigate and make suggestions. It is quite impossible to describe all the ruling conditions which may have contributed to the trouble.

PUZZLED.

Working of Oak.

SIR,—I have recently had an oak front door made of vertical boards outside with joints covered with mouldings, and horizontal boards inside clamped through with nails. Before the house was finished we found that the door had curled in the middle quite ¾ in., *i.e.*, the top and bottom touched the rebate and the middle about lock height was ¾ in. off the rebate. What is to be done about it?

ANXIOUS.

Wood for Staining.

SIR,—What is the best wood to use for joinery to be finished with stain? The wood should be a soft wood and as free from knots as possible.

TYRO.

Focal Length of Bridge.

SIR,—What is meant by the focal length of a bridge? Is there a formula for finding it, when length and weight of bridge, and load, are known?

CHARTERED SURVEYOR.

Hotel Fire Exits.

SIR,—I have been asked to report on the fire exits of a four-story hotel, having a long frontage, with rooms either side of a main corridor. Two main staircases exist about, but not quite at, either end. Four exits are provided, roughly central on the back elevation, on all floors except the first floor. The overall length is 250 ft.; would this be sufficient means of escape? Can anyone refer me to an up-to-date schedule of requirements issued by any public authority?

PROVARIBA.

Damp Walls.

SIR,—We recently completed a house, every room in which is perfectly dry except one bedroom, and here the three external walls *and* the internal wall are damp and mould is forming on the wall-paper. The room below is quite all right, and the room on the other side of the internal wall is also dry. Do you think it possible for anything in the paste for the wall-paper to be causing this trouble?

CURIOUS.

Cubic Capacity.

SIR,—When finding the cubic capacity of a house, where should the measurement be taken, *i.e.*, from the top of the footings to half way up the roof, or from the bottom of the footings to half way up the roof? Any information on this point would be esteemed.

R. M. P.

THE LONDON SOCIETY

SIR GEORGE DUCKWORTH occupied the chair at the meeting of the London Society on Friday last, at the Royal Society of Arts, W.C.2, when Dr. R. E. Mortimer Wheeler delivered a lecture on "The First City of London." The lecturer said that he had come to the conclusion that where London now stood there was no prehistoric London, and that the first City of London was the "parasite of London Bridge" and the creation of the Roman invaders. At Mortlake and Hammersmith there were long stretches of open gravel on both banks, and on that part of the Thames—roughly, the modern Boat-race course—innumerable prehistoric relics from the Stone Age onwards had been discovered. There, and not on the site of present London, was prehistoric London.

The lecturer went on to explain his statement that London was the parasite of London Bridge. London was the lowest point in the river at which a bridge could be thrown across. The bridge came into existence when overseas trade began to be a dominating factor in the economic life of south-eastern England—the bridge being an essential part of the system of communication at the time when roads had been made by which foreign goods could be distributed over the country. The necessary conditions—foreign trade, roads, and a strong central government—came into being at the time of the Roman occupation. It was probable, therefore, that London dated from the Roman Conquest, in A.D. 43, or perhaps twenty years or so before, when the site may have been to some extent settled by the Roman traders who preceded the flag. Roman London was probably a bridgehead settlement. The lecturer mentioned that there is new evidence from pottery which proves that the City which was destroyed by Boadicea in A.D. 60 already extended from the site of the Tower to the hill on which St. Paul's stands.

London was the fifth largest walled city north of the Alps, said the lecturer, and he proceeded to discuss the date of the Roman Wall, which is one of the most strongly disputed points among the problems of Roman London. It was contended by many authorities on Roman London that the wall was built at a late date in the occupation, perhaps in the third or fourth centuries.

The lecturer produced some interesting arguments in support of the theory that the walls of London dated from a much earlier period. He thought that they were probably built in the first century after the destruction by Boadicea of the Roman town. The great extent of the walled city suggested an early date, for there was much evidence that large and ambitious works of that kind belonged to the early period of success and ambition, while the small walled towns were characteristic of the time when the Roman cities were putting up defences against the barbarian invaders.

The lecture contained an interesting account of the chief building, the Basilica, of Roman London, a matter on which, also, the Historical Monuments Commission's report, shortly to be published, will throw much new light, recent excavations in Gracechurch-street having produced important discoveries. The Basilica, which was the town hall, law courts, and business centre in one, was a great building, the most important in the country. It stood roughly on the site of Leadenhall Market, and in a direct line with the chief street, which led from the end of the bridge over the Thames. It was a great hall, with aisles forming one side of a square surrounded with colonnades. The Basilica was probably 480 feet long—about as long as the frontage of Selfridges—and, in all probability, the biggest building north of the Alps.

The lecturer concluded by appealing for the appointment of a trained official to watch the building excavations in the area of Roman London.

WEEK IN PARLIAMENT

Out-Relief and Guardians.

Mr. Saklatvala asked the Minister of Health whether he was aware that the Lewisham Board of Guardians were instituting a scheme whereby able-bodied men in receipt of relief were to be compelled to make breeze blocks from clinkers and work a 40-hour week; that no adequate wages would be paid and that the relief granted would be mainly in kind; and had this scheme the support of his Ministry.

Mr. Chamberlain said he understood that this Board of Guardians proposed, in pursuance of their duties under the Out-Relief Regulations made in 1911, to institute a task of the description indicated in the question for able-bodied men in receipt of relief, and on his present information he proposed to approve the scheme.

London Squares.

A further sitting of the Royal Commission on London Squares was held, under the chairmanship of Lord Londonderry. A memorandum was submitted, on behalf of the owners of many of the principal squares, in which they stated that, subject to certain conditions, they were prepared to agree that 41 of the squares should remain unbuilt upon. One condition was that the landowners should be entitled to build on a square if he provided an equivalent open space within a specified distance. They also reserved the right to deal with the sub-soil in any way they thought fit, and to construct underground garages and parking places for cars. A representative of the Duke of Bedford, who owns several of the squares, stated that the Duke was of opinion that it was his duty to protect the interests of the tenants where amenities might be damaged or the character of the squares changed, and those interests might be affected if the squares were thrown open to the public. The Duke desired that the spaces should be open spaces for ever. Evidence was also given by the Town Clerk of Holborn Borough, who stated that that body opposed interference with private square gardens.

Houses Built.

Mr. Chamberlain, in reply to Mr. Shepherd, gave the following statement showing the number of houses completed with State assistance in England and Wales during each of the years 1919-20 to 1923-24 inclusive :—

Year ending March 31st.	Houses completed by— Local authorities.	Private enterprise.	Total.
1920 ...	576 ...	139 ...	715
1921 ...	15,585 ...	12,964 ...	28,549
1922 ...	80,783 ...	20,288 ...	101,071
1923 ...	57,535 ...	10,318 ...	67,853
1924 ...	14,353 ...	4,311 ...	18,664

Cost of Houses.

Mr. Chamberlain also gave Mr. Shepherd the following statement showing the average prices of houses included in contracts let by, or direct labour schemes of, local authorities during each month from January, 1924, to January, 1928, inclusive :—

Month.	Year 1924 A. £	Year 1924 B. £	Year 1925. A. £	Year 1925. B. £	Year 1926. A. £	Year 1926. B. £	Year 1927. A. £	Year 1927. B. £	Year 1928. A. £	Year 1928. B. £
January ...	386	445	438	501	456	493	427	492	389	437
February ...	389	439	440	488	429	500	422	489	—	—
March ...	416	459	439	489	444	487	425	494	—	—
April ...	415	442	438	496	434	495	421	479	—	—
May ...	404	476	436	495	436	495	397	474	—	—
June ...	421	462	442	485	435	501	425	481	—	—
July ...	428	495	444	513	455	502	418	483	—	—
August ...	398	491	450	504	434	498	420	497	—	—
September	438	502	437	499	445	502	370	458	—	—
October ...	451	500	447	503	453	522	395	438	—	—
November...	436	479	438	490	422	502	434	450	—	—
December	440	491	448	497	461	498	401	468	—	—

A.—Non-parlour houses. B.—Parlour houses.

The Subsidy.

Dr. Salter asked the Minister of Health whether he was aware that the existing uncertainty as to the future rates of Exchequer assistance for houses erected under the 1923 and 1924 Housing Acts was causing a slowing up of housing progress throughout the country; and whether he could make an early announcement to the effect that the present rates of Exchequer assistance would apply for houses actually completed by September 30, 1929.

Mr. Chamberlain said he was not aware that progress was being affected in any way by the consideration referred to. Section 5 of the Housing Act, 1924, required that the review of the subsidy at present payable should be undertaken after October 1 next, and he could not anticipate the result of a review which must be undertaken some months hence. He appreciated, of course, that, apart from the decision as to revision of subsidy, it might become desirable, in order to ensure continuity in house production, to make some earlier statement on the question whether subsidy at the present rates would remain available for any period after October next, but he was not yet in a position to make such a statement.

Rural Housing.

Mr. Chamberlain informed Mr. Everard that there were four counties for which no schemes under the Housing (Rural Workers) Act, 1926, had yet been submitted by County Councils, and in which none of the District Councils had been declared authorities. No applications to be made the authority for the purposes of the Act had been received from the District Councils in those counties, and the County Councils were further considering the matter.

Replying to Major Davies, Mr. Chamberlain said that up to the end of December last, the latest date for which information was available, applications had been received by local authorities for assistance under the Housing (Rural Workers) Act, 1926, in respect of 599 dwellings. At the same date assistance had been promised in respect of 151 dwellings, and work was in progress on 89 dwellings. The following was a list of the local authorities whose returns showed that work of reconstruction of improvement had been commenced on December 31 last :—

Anglesey C.C., Chester C.C., Cumberland C.C., Devon C.C., Essex C.C., Lincoln (Parts of Lindsey) C.C., Northampton C.C., Nottingham C.C., Pembroke C.C., Somerset C.C., Suffolk (East) C.C., Worcester C.C., York (North Riding) C.C., Sutton Coldfield T.C., Walsoken U.D.C., Atcham R.D.C., Downham R.D.C., Drayton R.D.C., Linton R.D.C., Lodden and Clavering R.D C., Rugby R.D.C., Spilsby R.D.C., Walsingham R.D.C.

New Flats at Grosvenor House.

Captain Crookshank asked the Minister of Transport if his approval was obtained before the plans were finally passed for the erection of the new flats on the Grosvenor House site; and, if so, what arrangements had been made to deal with the traffic congestion that would occur in Park-lane and Grosvenor-gate as soon as the building was fully occupied.

Colonel Ashley said his approval was not required, and he had no authority in the matter, nor, according to his information, did the London County Council in their examination of plans for new buildings, consider that they had any power to insist upon the provision of adequate accommodation for the traffic that would be attracted to those buildings, with a view to avoiding congestion in the streets.

Sir William Davison asked the Under Secretary of State for the Home Department, as representing the First Commissioner of Works, whether he was aware of the complaints from members of the public at the disfigurement caused to the amenities and beauty of the eastern end of Hyde Park by reason of the erection of a block of flats on the site of Grosvenor House; and whether he would introduce legislation to secure that no building adjoining a royal park should be erected to a height beyond the statutory 80 ft. from street level unless plans had first been submitted and approved, showing that the amenities of the district and the enjoyment by the public of the adjoining open space would not be prejudiced.

Sir V. Henderson said that the Office of Works was consulted in regard to this block of flats under section 48 of the London Building Act of 1894, and saw no sufficient ground for entering an objection from the point of view of the amenities of the Park. While the First Commissioner fully realised the importance of preserving to the public their enjoyment of the open spaces under his charge, he considered that at the present time there was no need for him to seek special powers for the protection of this or of the other Royal Parks.

Houses to Let.

Mr. Looker asked the Minister of Health if he was taking any and, if so, what steps to encourage the building of houses at rents which the poorer-paid section of workpeople could afford to pay.

Sir Kingsley Wood said that it had for some time past been the policy of the Ministry to encourage the erection, under the subsidy schemes, of houses which could be let at rentals within the means of the less well-paid workers, and a circular which was issued by the Minister more than a year ago referred to that matter. The Minister had reasons to believe that the type of house in question was being erected in an increasing proportion under the subsidy schemes.

India House.

Mr. Wallhead asked the Under-Secretary for India whether work had yet begun in connection with the erection of India House in London; and whether, in view of the fact that it was found necessary to employ a European architect on account of the nature of the site, the Government of India proposed to make provision for the employment of Indian artists and craftsmen in the decoration and fitting of the interior of the building.

Lord Winterton said that the work had commenced. The internal decoration of the building, on which he understood Indian artists would be employed, was still under consideration.

Town Planning in England and Wales.

The following town-planning schemes came into force during the month ended January 31, 1928 :—

Preliminary statements received (Stage B).
- Hertfordshire : Harpenden U.D.C.
- Lincolnshire : Skegness U.D.C.
- Yorkshire (West Riding) : Leeds T.C. (No. 4); Shipley U.D.C.; Wakefield T.C.

Resolutions received (Stage A).
- Devon : Exeter T.C. (special area).
- Durham : Sunderland R.D.C.
- Kent : Maidstone T.C. (No. 2).
- Lancashire : Ashton-under-Lyne T.C.
- Norfolk : St. Faith's R.D.C.
- Staffordshire : Kingswinford R.D.C.; Smethwick T.C.; Stoke-on-Trent T.C. (Southern Extension Area).
- Sussex : Cuckfield R.D.C.

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—VII

By A. M. GILES, B.Sc., A.I.Struct.E., A. M.I.E.E.
DIAGRAMS AND ILLUSTRATIONS BY M. R. DUMVILLE.

Heat.

IN this branch of the subject it is proposed to deal with the effects of heat upon the materials with which the practical man comes into contact. In his everyday life and work he is sure to meet with numerous cases where a knowledge of the principles of heat will be of service to him. In some instances he may have to be on his guard, *e.g.*, in the fixing of hot-water pipes, or the new system of heating—the panel system—or even in the fixing of iron girders and roof trusses; while in other instance he may receive considerable help, *e.g.*, in the restoring and maintaining of walls and bridges which, by settlement or otherwise, have become displaced.

Before giving in detail the numerous examples in which a knowledge of heat principles will be of service, let us first discuss some of these principles. It would seem that there is a certain amount of laxity somewhere, for one still finds people who think that heat and temperature are synonymous terms. This is far from being the case, for there is a very real difference between them. It requires very much more heat to raise a gallon of water to its boiling point than it does a pint, yet both have the same temperature when they are boiling. In the same way, if you take a cup of boiling water from a kettle, it would be at the same temperature as the water in the kettle, yet no one could contend that the water in the cup and the water in the kettle contained the same

FIG. 24.

amount of heat. Also, it does not follow that a body which possesses a larger amount of heat than another is necessarily at a higher temperature. It may be quite the opposite. Yet we know that, if a body having a high temperature be put into direct contact with one having a low temperature, heat will flow from the former to the latter. In fact, it is from this idea that we get our definition of temperature, and, just as water will flow from a high level to a low level until the levels are the same, so heat will flow from a high-temperature body to a low-temperature body until they are at the same temperature; and therefore temperature may be defined as that property of a body which decides whether heat will flow from it, or to it, when it is put into contact with another body.

Although we have just spoken of flow of heat as being analogous to that of flow of water, it must not be thought that heat is a material substance like water. No, it is a condition; *e.g.*, your hand is a material, but warmth is a condition of the hand. To the ordinary person the terms hot and cold have a definite meaning, but, after all, they are only relative terms. For example, ice is cold when compared with your hand, but it is hot when compared with liquid air. A kettle of liquid air would boil if stood on a block of ice.

Experiment.

Place three fairly large basins on the table (see Fig. 24). Into *A* pour some hot water, not so hot that you cannot put your hand into it. Into *C* pour some lukewarm or tepid water, and into *B* pour some cold tap-water.

Now place your left hand in the water in *A*, and the right in the water in *B*, and keep them there for a few seconds. Then place them both together in the water in *C*. The water in *C* will feel cold to the left hand and warm to the right hand. Which hand is telling the truth? They both are, for the water in *C* will feel warm to the right hand which has come from basin *B*, but cold to the left hand which has come from basin *A*. A body, then, is described as hot or cold only in so far as it is compared with another body.

It was stated above that heat is not a material substance, though for many years it was supposed to be a fluid called "caloric." In 1798 Count Rumford, when boring cannon in a Munich arsenal, found that he was able to boil water with heat developed by friction. Later, Sir Humphrey Davy showed that heat could be developed from friction by rubbing together two pieces of ice; and later, Joule, in 1843, at Manchester, showed that there was a definite relation between heat and work, *i.e.*, by doing work heat could be produced, and, conversely, by the expenditure of heat, work could be performed. Now work can only be done by an expenditure of energy, and this would seem to point to there being some sort of relation between heat and energy. A moving body can perform work, therefore it must possess energy; *e.g.*, the pile is driven into the ground by the energy of the falling weight. The energy possessed by a moving body is called its "kinetic energy," and the amount of energy it possesses depends upon its mass and its velocity. By reducing the velocity of a moving body it is deprived of some of its energy. The following experiment suggested by Mr. Alan E. Munby, F.R.I.B.A., should be helpful in giving us some conception of the relation between heat and energy.

Experiment.

In the experiment illustrated in Fig. 25 the workman is lowering a pail of material by allowing the rope to slip through his hand. Its velocity, consequently, is less than it would be if allowed to fall freely, *i.e.*, without the restraining action of the workman's hand. Since its velocity is less, the kinetic energy it possesses is less. The loss of kinetic energy appears as heat which is detected by the workman's hand as the rope slips through it. From this and numerous other experiments and arguments we are led to define heat as a form of energy. It is said that the particles of a body, whether solid, liquid, or gaseous, are in a state of movement relatively to one another. If a body be heated its particles move quicker, they therefore possess more energy, and this energy shows in the form of acquired heat, and therefore the temperature of the body rises. (As we shall see later, it is possible for the temperature not to rise while a body is gaining heat.) In just the same way we may say that if heat be withdrawn from a body, its temperature will be reduced, and, finally, if the particles could be brought to rest, they would possess no energy, and the body would possess no heat. This point is known as the absolute zero of temperature. Although scientists have obtained some very low temperatures, they have not yet succeeded in reaching absolute zero.

FIG. 25.

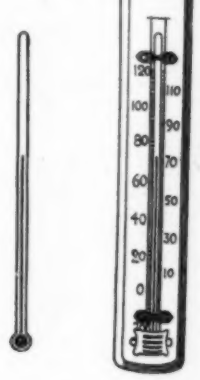


FIG. 26.

Thermometers.

In our measurement of temperature in everyday life we do not worry about this absolute zero. It is a long way outside ordinary temperatures, so we confine ourselves to making measurements in relation to something with which we are more familiar. We choose two fixed points: (*a*) the melting point of ice or the freezing point of water which we call the lower fixed point, and (*b*) the boiling point of water called the upper fixed point. The latter is scarcely a fixed point because it changes with the atmospheric pressure, but the variations are so small that we regard it as a fixed point. Actually we take the boiling point of water as the upper fixed point when the atmospheric pressure is equal to 76 cm. or 29.92 in. of mercury.

Instruments for measuring temperature are called thermometers, and the illustration (Fig. 26) shows the kind of thermometer that is in most common use.

One of the effects of heat upon materials is to cause them to expand, and for a definite change of temperature some expand more than others, *e.g.*, mercury expands more than glass, and it is this effect of heat upon materials that we make use of in measuring temperature. We are not particularly concerned with how thermometers are made so long as we know how they act. Fundamentally the thermometer consists of a thick-walled fine-bored glass tube with a thin-walled bulb at its lower end. Some mercury is introduced into the tube, which, after all the air has been removed, is sealed at the upper end. The next thing is to determine its fixed points, and it is so arranged that the lower one is just above the bulb, and the upper one is near the top of the tube.

The Fahrenheit thermometer is used for ordinary domestic purposes. Its lower fixed point, or freezing point, is marked "32," and its upper fixed point is marked "212." (Blood temperature is 98.5 degrees F. The comfortable temperature of a living-room is 60 degrees F.) The space between the two fixed points is divided into 180 parts, each part being called a degree. The scale may be marked upon the glass or upon the wooden framework to which the thermometer proper is fastened. (See illustration Fig. 26.)

Another thermometer, which is used in laboratories and for scientific investigations, is called the Centigrade thermometer, and, as its name suggests, it is divided into a hundred steps or degrees between its lower fixed point marked "0" and its upper fixed point marked "100." It is quite an easy calculation to find out what the reading on one thermometer will be, provided it is known on the other. If the temperature as shown by the Fahrenheit thermometer were 59 degrees, then the centigrade thermometer would read 15 degrees.

BRITISH INDUSTRIES FAIR.

THE HEAVY SECTION, BIRMINGHAM.

THE British Industries Fair, of which the Heavy Section opened at Castle Bromwich, Birmingham, on Monday, is a splendidly arranged exhibition and one of great interest to the building industry. This is the eighth Fair, and its use and popularity among potential buyers not from Great Britain only, but from all over the world, is such that two new bays of an area of over 100,000 square feet have been added to hold an increase in stalls which is, we believe, no less than half again over last year's figures.

No manufacturing industry in Great Britain is represented on a more comprehensive scale than the various trades connected with the building industry and the manufacture of house fittings, etc. The display of the latest inventions, adaptations and improvements in the building trade covers the whole field in house and factory construction and decoration, and in fittings for the home. A large proportion of the exhibits is shown for the first time. There is a display of every kind of apparatus, fitting or metal utensil for heating, lighting and cooking; scaffolding; rails and pipes; factory equipment; concrete and concrete mixers; ladders; trucks; floorings, damp courses and roofings; mouldings; metals; vices, pipe tools, augers and bits, picks, hammers, mattocks and other implements; tree-pulling machines, hydraulic lifting jacks; and a wide range of fireplaces, tiles and decorative and utility fittings for the house.

There was a private Press view of the Fair on Friday, and a luncheon was given, at which the President of the Birmingham Chamber of Commerce (Mr. G. N. Guest) occupied the chair. In offering a cordial welcome to the members of the Press, he explained that four years ago the Government of the day voted £100,000 for advertising the British Industries Fair. Of that sum £25,000 had been spent each year in advertising both the London and Birmingham sections throughout the world. But the Government did not propose to vote any more money for the purpose. He thought those present would agree that that must not happen, but that even a larger sum of money should be devoted to publicity in connection with the Fair.

Colonel H. J. Walduck (chairman of the Fair Management Committee), in a short speech, mentioned that the stands in the exhibition constituted a shop window eight miles long. The Fair possessed a dual advantage. It enabled manufacturers and sellers to meet buyers and to show their samples within a comparatively short period of time; the buyer, on the other hand, had the opportunity of seeing displayed the comparative products of a number of manufacturers and to discuss terms with them under excellent conditions.

We append some notes upon the principal exhibits:—

BUILDING A.

Block 2E. Candy and Co., Ltd.—Heathfield, near Newton Abbot, Devon.—On a pleasant stand these manufacturers of the well-known "Devon" hearth fires have examples in large variety of their faience and tile fireplace fitments, and also of their glazed tiles, both slabbed and unslabbed. A charming display of their "West-countree" ware is also to be seen in a wide range of shapes, with distinctive and unique glazed effects.

Block 3G, Stand 1. Minton, Hollins and Co., Ltd.—Patent Tile Works, Stoke-on-Trent. "Minton" tiles, suitable for every purpose, are on view here, and prominence is given the firm's "Encaustic" floor tiles, other varieties in glaze and enamel and fireplace tiling in a variety of designs and colourings being also displayed.

5C, Stand 1. The Well Fire and Foundry Co., Ltd.—15, Berners-street, W.—A number of fireplaces in fusion stoneware and the ever-popular salt glazes are shown in delightful display, being a range of the most popular of many designs and colourings.

5H, Stand 1. Maw and Co., Ltd., Jackfield, Ironbridge, Shropshire.—Very attractive wall and floor tiling, suitable for all uses, are shown here, and in addition tiles and faience made up into fireplaces, kerbs and hearths.

6G, Stand 2. Carter and Co., Ltd., Poole.—On this tasteful stand is shown a range of Carter fireplaces. Some are shown with fire on the hearth and some with raised metal grates. Simple slabbed surrounds, complete slabbed surrounds and mantels, briquette fireplaces for building in position, and faience fireplaces in large blocks, with a variety of slabbed tile and faience kerbs, are also shown.

6G, Stand 2. Bath Artcraft, Ltd., Flight Works, Bath.—This firm is exhibiting in conjunction with Messrs. Carter, of Poole. The united stand is one of the most delightful in the Fair, and the Bath Artcraft greatly enhance its attraction with their mantelpieces in modern English style, which may be said to be peculiarly fitted to modern requirements. One fireplace of an unglazed brick with an overmantel of weathered grey oak particularly caught our fancy. We were not surprised to hear that it, with several others, was sold within an hour of the opening of the Fair. A new line in cast cement overmantels is also shown.

7G. Planet Foundry Co., Ltd.—Guide Bridge, Manchester.—The exhibit here consists of combination grates, mantels and mantel registers, grates, baths and lavatory fittings. Of particular interest is the "Meridian" grate. The construction of this grate is practical, as it is strongly built of cast iron throughout and completely self-setting. There are no intricate parts to confuse the builder or the user. The oven is of ample size for the demands of a large household, and the boiler capable of supplying hot water for all domestic purposes and giving successive hot baths, while the hotplate is an efficient boiling hob.

8C, Stand 1. Samuel Smith and Sons, Ltd., Beehive Foundry, Smethwick, and 41, Colmore-row, Birmingham.—A comprehensive display of grates, etc., from the small barless grate to the latest model of the high-class "Foresight" combination range, is shown here. The firm calls particular attention to the "Foresight Junior" stove and also to the new "D" series of "Foresight" ranges. The "D" pattern range has a direct appeal to the user who prefers the closed type of range and has many advantages to commend itself.

BUILDING AA.

10A, Stand 2. Parcedoors, Ltd., Grand Parade, Brighton.—The "Parcedoor" shown here is an ingenious device which enables tradesmen to effect deliveries of goods whether anybody is in the house or not. It is a sound engineering job and when once a delivery is made, it cannot under any circumstances be reached from the front door. It is easily fitted and absolutely thief-proof.

10D, Stand 5. Drew, Clark and Co., "Diamond" Patent Ladder Works, Leyton, E.10.—Types of firm's patent "Diamond" auto-folding platform steps and telescopic extension ladders and 2 and 3 section are on view, with a variety of types for combined ladders and steps and "Rap-rig" patent scaffolding for internal decoration. The whole is an exhibit that will interest the practical contractor.

10E, Stand 1. Nobel Chemical Finishes, Ltd., Slough, Bucks.—This firm displays its "Belco" cellulose finishes for industrial purposes; "Belco" wood finishes for furniture and all woodwork: "Belco" coloured furniture enamels for application on wood, and "Necol" cellulose lacquers and enamels for wood and metal. "Necol" glossy spray enamels and "Necol" cracking enamels are further on display.

11H, Stand 3. The Ruberoid Co., Ltd., 296, High Holborn, W.C.1.—On this stand are displayed "Ruberoid," "Starex" and "Pluvex" roofings for every type of roof and building, which have been in use under all climatic conditions for over 30 years. "Ruberoid" strip slates in red or green for garages and all sports and pleasure buildings and pure bitumen dampcourses are also on view.

12B, Stand 4. The Hurry Water Heater Co., Broad-street, Birmingham.—An exhibit of interest to architects and builders of small "Council" or other cottages is the "Hurry" portable gas-heated copper and furnace. This at a trifling cost will give repeat hot-water baths in quick succession. The No. 10 "Hurry" cylinder will supply the lavatory washbasins and kitchen sink at the same time without high pressure.

12F, Stand 2. O. Bruster and Richardson, Lloyd's-avenue, E.C.3. — "Glow-Worm" boilers for domestic use are shown in five sizes, suitable for hot-water tanks of from 20/70 gallons capacity. Special features are their large hot-plate open fire baffled waterway, giving high efficiency and economy. "Glow-Worm" open fires, invented by Dr. J. S. Owens, are on view also, designed to burn coke or anthracite. These give off a radiant heat in a horizontal direction, without smoke or smell. Gas lighters are provided for these.

12F, Stand 4. Electrolux, Ltd., 155, Regent-street, W.1, and 117, Dale End, Birmingham.—Shown on this stand is what is claimed to be the only method of continuous refrigeration which is motorless. "Electrolux" dispenses entirely with mechanical moving parts with their attendant wear and tear, and it is said to be the only refrigerator which does not require maintenance service.

14C, Stand 1. Rd. Johnson, Clapham and Morris, Ltd., Jacem House, Trafford Park, Manchester.—Wire work of all descriptions is shown here, including "Jacem" brand galvanised wire netting, woven wire of all descriptions, copper wire—bare, tinned, S.C.C., D.C.C., strand, tape, section and wire work for all industries. Among the manufactured articles are window and machine guards, miners' lamps, steel wire, lattice and "Keedon" concrete reinforcement, road and "Bricktor" reinforcement, etc. An interesting display is a wire loom in operation weaving copper woven wire.

15F, Stand 1. The Tilley Lamp Co., Brent-street, Hendon, N.W.4.—A selection of oil vapour lamps for domestic, factory, stable, railway and other kinds of artificial lighting, particularly in country districts, is on view. It is claimed to be the safest and cheapest light available. Lighters using paraffin may be obtained if desired. The oil vapour stoves have patent vapouriser with a needle for adjusting size of flame and clearing nipple.

15G. The Carron Company, Carron, Stirlingshire.—There are some attractive specimens of fireplaces among this company's exhibits, including a beautifully carved oak surround and mantelpiece with a rustless bright steel interior. Another that took our fancy was a white marble mantelpiece with a vertical-ribbed black background in cast-iron framing a stainless interior. Various cooking ranges and cooking apparatus for coal, steam, gas and electric power complete an interesting exhibit.

15H, Stand 4. The Portland Cement Selling and Distributing Co., Ltd., Ship House, 20, Buckingham Gate, S.W.1.—Exhibits of "Red Triangle" quality are on view here, the four brands being:—Ship Canal "England"; "Greaves"; "Holborough" and "Vitocrete" cements.

16B and C. Ruston and Hornsby, Ltd., Sheaf Iron Works, Lincoln.—A further step in the importance of the machinery section of the Fair is marked by the appearance for the first time of a mechanical excavator. This machine is fitted with caterpillar tracks so that it can proceed under its own power to any excavation where it may be required. It is also fitted with special equipment by which it can easily be converted for work as a shovel, drag-line excavator, back acting trencher, skimmer, scoop, or a grabbing

crane. The machine is fitted with a petrol-paraffin engine and where cheap electric power is available, the machine can be fitted for electrical operation.

16F, Stand 1. G. A. Harvey and Co. (London), Ltd., Greenwich Metal Works, S.E.7.—The exhibits shown here will attract the engineer and those entrusted with the efficient management and equipment of large works and industrial centres. Of particular interest is the array of perforated metals and woven wire for all purposes. English steel furniture is another exhibit. Steel cupboards, filing cabinets, typists' tables, shelving, etc., are likely to interest many.

BUILDING B.

17Z, Stand 2. Edward White, Windsor Works, Redditch.—Machinery suitable for wireworkers and others, including machines which will straighten and cut wires, and machines to form wires to a variety of shapes, are an interesting display. A 3 cubic foot open drum spade type concrete mixer is an additional exhibit.

18Y, Stand 3. Crossley Bros., Ltd., 9a, Dale End, Birmingham.—Two crude oil engines —66 h.p. and 16 h.p.—suitable for electric lighting sets, are on this stand, together with a 1½ kw. lighting set. This stand is of particular interest to architects who are designing country houses or any building where independent current supply is required.

18B, Stand 1. Tangyes, Ltd., Cornwall Works, Birmingham.—This exhibit comprises one 52 b.h.p. heavy oil engine, cold starting type, one 19 b.h.p. fuel oil engine, cold-starting type for electric lighting purposes, two "Tan-Gyro" centrifugal pumps, four new design vertical single ram pumps, one 4 in. by 6 in. vertical treble ram pump, with bored guides, etc., with a selection of hydraulic and screw lifting jacks, also malleable castings and leathers.

18F, Stand 1. D. Anderson and Son, Ltd., Park-road Works, Stretford, Manchester.—This exhibit comprises "Red Hand" quality roofing felts, among which is "Rok" roofing used at Canberra and Delhi, and also on some of the largest industrial buildings throughout the world. They are showing a model to demonstrate the system at various stages of construction. Other models show different classes of work on which their materials are used.

19X, Stand 5. The Phoenix Engineering Co., Ltd., Chard, Somerset.—This is an exhibit of interest to road engineers, municipal authorities and municipal surveyors, for tar and bitumen boilers—"Phoenix Rapid" (vertical and horizontal patterns)—tar and bitumen spraying machines, bitumen boilers and spraying machines—"Phoenix Extra Rapid"—mastic asphalt mixers and cauldrons, pot hole outfits, pumps and carts and vans of all descriptions are on view, comprising an exhibit which is of the highest order.

19Z, Stand 2. Earle, Bourne and Co., Ltd., Heath-street South, Birmingham.—Cold rolled brass (of various alloys), copper and nickel silver; solid drawn brass and copper tubes for condensers; engineering, plumbing, etc., are on view; also brazed brass and copper tubes; angles, channels and sections; hand rails and shop front mouldings in brass, bronze, etc., and a profusion of domestic and sanitary goods.

19C, Stand 2. The Francois Cementation Co., Ltd., Bentley Works, Doncaster.—A shaft model is displayed here showing Francois method of cementation and ferro-concrete lining and patent concrete pile. Photographs of work carried out, diagrams, "Betonac" steel concrete pre cast units, a section of roadway and section of floor, complete an exhibit that is full of interest.

19E, Stand 1. R. A. Lister and Co., Ltd., Dursley, Glos.—Petrol auto-trucks, of one-ton capacity, for transport work on railway platforms, docks, factories, warehouses are on view, besides electric lighting and power plants for country house lighting, and for driving small machinery such as pumps, saws, etc. Engines, automatically lubricated, vertical 4-stroke type, for all power purposes, are a further exhibit, as are pumping plants for country house and estate water supply.

BUILDING C.

20X, Stand 2. Marshall, Sons and Co., Ltd., Britannia Ironworks, Gainsborough.—This exhibit comprises oil engines, among them a 60 b.h.p. two-cylinder type, vertical class "SV2," and a 16 b.h.p. single-cylinder horizontal type, class "S." Both engines are suited to use crude, refined and residual oil fuels.

20A, Stand 4. Petters, Ltd., Yeovil and Ipswich.—This exhibit is of Petter oil and petrol engines. These engines work on the two-stroke cycle, with an extremely smooth motion, and start instantly from cold. Containing no valves or valve gear, they have a minimum of working parts. Electric generating plants are also on view.

20D, Stand 2. Davey, Paxman and Co., Ltd., Standard Ironworks, Colchester.—Here is shown a six-cylinder Paxman vertical cold starting oil engine, mark 6VH, capable of developing 360/414 b.h.p. per hour, shown running under its own power. It embodies a patented "spring injection" and eccentric silent valve gear. These engines are made in a range of sizes from 25 to 900 b.h.p., and from one to six cylinders.

21F, Stand 4. John Fowler and Co. (Leeds), Ltd., Leeds.—The chief exhibit is the Fowler 7/5 concrete mixer fitted with petrol-paraffin engine, power loader and automatic water tank. Also, the Fowler patent tilting drum mixer, specially designed for making hair plaster, and driven by a petrol-paraffin engine; various hoists, elevators and steel barrows complete an interesting exhibit.

21G, Stand 4. Matchett and Martineau, Ltd., 260, Bradford-street, Birmingham.—Here there is a special exhibit of patent "Woodlock" combined casement stay and fastener, designed to supersede the old pattern stay with adjusting holes and pegs. Patent hook hinges for heavy doors and gates and steel hinges for all purposes are also on view.

22D, Stand 1. The Liner Concrete Machinery Co., Glasshouse Bridge, City-road, Newcastle-upon-Tyne. — "Liner" patent machines for producing concrete slabs, blocks and bricks are displayed; also a semi-plastic concrete mixer and various moulds, etc., of supreme interest to the contractor.

23D, Stand 1. The Macintosh Cable Co., Ltd., Derry.—Paper insulated cables for all voltages are on show here, also "Maconite" cables for various purposes from bell wire to mains. The Macintosh industrial wiring system, designed for use in factories where destructive conditions are present, is of primary interest, as is the Macintosh overhead distribution system for economical supply to housing schemes, villages, etc.

24E, Stand 1. Wadkin and Co., Green Lane Works, Leicester.—This exhibit includes a wood-milling and pattern-making machine, single dimension saw bench, motor-driven cross-cutting and trenching machine, vertical spindle moulder, roller feed saw bench, chain and chisel mortising machine, etc., of great interest to the contractor.

24E, Goodwin, Barsby and Co., Ltd., St. Margaret's Ironworks, Leicester.—Here are shown a 12 in. by 6 in. patent "Acme" portable stonebreaker, suitable for builders and for export; 12 in. by 5 in. concrete breaker for builders' rubble, and ¼ yard portable concrete mixer, with hoist, engine, batch measurer and loader.

25A, Stand 2. Gent and Co., Ltd., Faraday Works, Leicester; 25, Victoria-street, S.W.1, and 52, Blackett-street, Newcastle-on-Tyne.—This display of "Tangent" specialities includes:—"Pul-Syn-etic" electric clocks and time discipline apparatus, electric bells and indicators, staff locaters, electric motor syrens for fire alarms, water level indicating and recording apparatus, etc.

The steelwork of the new sections of the Fair buildings is by Messrs. E. C. and J. Keay, Ltd., of Darlaston.

TRADE NEWS

New Companies.

With regard to the notice of Messrs. H. W. Parker & Co., Ltd., of Brixton Hill, S.W., published under this heading in our issue for February 10, we are asked to state that the firm are trading entirely as builders' merchants, and not as builders and decorators.

Fletton Bricks.

An indication of how London Brick Co. and Forders, Ltd., manage to supply a brick of such a standard of quality as "Phorpres" Flettons at such a low price is given in their production total for 1927. This well-known brand is appreciated by many leading architects and builders, who find in it a means of maintaining a high standard of quality in materials.

Brass Valves.

We have received the January issue of *The Walworth Log*, a publication of the Walworth Company, of Boston, U.S.A. This firm specialises in valves and fittings, and the issue contains an interesting article on "High Steam Pressures and Temperatures," and one also on "The Development of Steel Castings." We learn that the Walworth Company have —among other jobs—secured the contract for fittings, etc., at the new 1,500-room Biltmore Hotel, Los Angeles, California.

Motor-car Lore.

Those among our readers who are thinking of buying a car this year should make a point of getting a copy of the New Motorists' Number of *The Autocar*, dated February 24, which is now on sale. This is an enlarged and attractively illustrated issue, and the contents have been specially prepared for the purpose of helping the newcomer to motoring. The first problem that confronts the prospective car-owner is the selection of a suitable vehicle at a convenient price. As a solution, *The Autocar* provides a Classified Buyers' Guide, including prices and specifications of all cars on the British market for 1928, and an experienced motorist explains the points that should be considered when choosing a machine in any selected class.

Multi-coloured Facing Bricks.

Amongst numerous jobs for which the multi-coloured facing bricks of Messrs. R. G Ward and Co., Ltd., of 5, Laurence Pountney Hill, E.C.4, have been used, some of the most important are as follows:—Dr. Barnardo's Homes, Barkingside; housing scheme for G.W. Railway; housing scheme for L.C.C. at Becontree, Downham, Edgware; May Fair Hotel, W.; new flats, Park Lane, W.; new flats, Larkhall Estate, Clapham; new school, Maidstone; Georgian houses, Holland Park; houses and market buildings at Chiswick; shops and flats at Dagenham, etc., etc. In all many millions of these attractive bricks have been supplied in either 2 inch or 2½ inch multi-coloured, red or rustic.

Metal Workers' Annual Report.

At the 27th annual general meeting of Ewart & Son, Ltd., 346-350, Euston-road, N.W.1, the chairman, Mr. G. H. Ewart, announced that the profit for the year 1927 was the largest yet recorded in the company's 94 years of trading. Messrs. Ewart's have, we learn, had numerous interesting contracts during the year, among them being the copper roofing for the Mercers' Company's Hall, and the Bodleian Library at Oxford, while the company's copper lightning conductors have been fitted to Worcester College, Oxford, and several churches, etc. We learn, also, that the company's gas water-heaters and geysers have more than maintained their popularity. An interesting product was the "crash-proof" and "leak-proof" petrol tanks built by Messrs. Ewart for Capt. Malcolm Campbell's "Bluebird" machine, which at the present moment now holds the world's speed record at Daytona, Florida.

NEW BUILDINGS IN LONDON

Acton.—HOUSES.—The Great Western (London) Garden Village Society, Ltd., has accepted the tender of Messrs. R. J. Rees & Co., Ltd., of Pontypridd, for the erection of 52 houses at Acton.

Bermondsey.—OFFICES. — Tenders for the erection of new municipal buildings in Spa-road are now being invited by the Bermondsey Borough Council.

Bethnal Green.—FLATS.—A proposal to build flats on a site in Pedley-street is to be considered by the Bethnal Green Borough Council.

Bethnal Green.—BUILDING.—The Borough Council are proposing to spend approximately £12,800 in erecting a four-storey building to contain sixteen tenements.

Bermondsey. — WAREHOUSES. — Messrs. Stock, Page and Stock, architects of 18, St. Thomas'-street, have submitted application to the Bermondsey Borough Council for Messrs. Anning and Cobb, for erection of a warehouse in Stoney-lane, S.E.

Cheapside.—DEMOLITION.—The old buildings at the corner of Cheapside and Friday-street, E.C.2, owned by Messrs. Meakers, Ltd., are to be pulled down and rebuilt. Plans are being prepared by the company's surveyor, Mr. A. T. Panton. Demolition will be carried out by Messrs. H. J. Greenham, Ltd., Isleworth.

Croydon. — ADDITIONS. — Messrs. Meux's Brewery Co., Ltd., propose to carry out alterations and additions to their "Freemasons' Arms" public-house in Penge-road, to the plans of the brewery surveyor, Mr. W. E. Foster.

Deptford.—BATH.—The Deptford Borough Council are now inviting tenders for the erection of new women's swimming baths in Laurie-grove, S.E.

Deptford.—BUILDING.—A sum of £22,700 has been sanctioned by the London County Council for the erection of Clinton House on the Watergate-street area (Hughes-fields estate), Deptford.

Deptford. — INSTITUTE. — The London County Council recommend £120,500 in respect of the erection of the South-east London technical institute at Deptford.

Dollis Hill.—RESEARCH STATION.—The Unic Contractors, Ltd., Craven Park-road, Harlesden, N.W., are the contractors for the buildings now being erected at Dollis Hill to the designs of the architects to His Majesty's Office of Works. The constructional steelwork is being supplied by Messrs. Young & Co., 6, Queen Anne's Gate, Westminster, S.W.1.

Downham.—SURGERY.—A site in Downham-way is to be let on lease by the London County Council to Dr. C. G. K. Thompson for the erection of a private residence and surgery.

Ealing.—REBUILDING.—A tender has been approved for the rebuilding of "The Feathers" restaurant, in the Broadway, Ealing, W.5. Messrs. F. J. Eedle and Meyers, 8, Railway Approach, S.E.1, are the architects and Mr. W. Lane, of the same address, has prepared the quantities

Ebury Bridge-road.—HOUSING.—The Westminster City Council recommend that the surplus land at the north (Ebury Bridge) end of the Canal be utilised for the provision of housing accommodation, with shops or other business premises on the ground floor, and for the provision of a site for a maternity and child welfare centre and a site for a tuberculosis dispensary.

Fulham.—GARAGE.—A site in Fulham Palace-road, S.W.6, has been purchased by Messrs. Sinclair Automobiles, Ltd., for the erection of a garage for 200 cars, petrol service stations, etc. Plans have been prepared by Mr. G. Smith, Deacon-road, Kingston-on-Thames.

Hosier-lane.—WAREHOUSE.—A large warehouse is to be built in Hosier-lane, E.C.1, for Messrs. Lovell and Christmas, Ltd., West Smithfield, E.C.1. The builders are Messrs. Dove Bros., Ltd., Cloudesley-place, Islington, N., and the steelwork will be fabricated by Messrs. Moreland, Hayne and Co., Ltd., 80, Goswell-road, E.C.1. The plans have been prepared by Messrs. Yetts, Sturdy and Usher, 34, Gordon-square, W.C.1.

Hammersmith.—ADDITIONS.—The governors of the West London Hospital propose to carry out further extensions to their buildings in Hammersmith-road, W., including a new clinic to cost £12,000. The plans have been prepared by Mr. A. Alban H. Scott, F.R.I.B.A., 13, Old-square, Lincoln's Inn. W.C.

Hounslow.—CHURCH.—A new Baptist church is to be erected on a site in the High-street to accommodate between 400-500 persons. Plans have been prepared by Mr. W. Hayne, Frinton-on-Sea.

Islington. — DWELLINGS. — The London County Council are to spend £68,860 in respect of the erection of two blocks of dwellings on the George's-road area (Ring Cross estate), Islington.

Ilford.—WORKS.—New printing works are to be erected in Grove-Road, for Messrs. A. C. Shaw and Co., Ltd., 7, St. John's-lane, E.C.1. The builders are Messrs. Holland and Hannen and Cubitts, Ltd., 258, Gray's Inn-road, W.C.1. The plans have been prepared by Mr. R. W. Lone, A.R.I.B.A., 63, Lincoln's Inn Fields, W.C.2.

Islington. — ADAPTATION. — The Empire, High-street, Islington, is to be equipped as a picture-house.

Leadenhall-street.—ADAPTIONS.—Nos. 7-10, Leadenhall-street, E.C.3, has been acquired by the Friends Provident and Century Insurance Co., Kingsway, W.C., who propose to adapt the premises as new head offices. The company's architect is Mr. A. W. Rocques.

Ludgate Hill. — CONVERSION. — Messrs. Ebenezer King, Ltd., 23, Whitefriars-street, E.C.4, have secured the contract for the conversion of Nos. 1-2, Ludgate Hill, E.C.4, into branch offices for the National Provincial Bank, Ltd. The plans have been prepared by Mr. F. C. R. Palmer, F.R.I.B.A., bank surveyor, in collaboration with Mr. W. F. C. Holden, F.R.I.B.A., assistant surveyor.

Mill Hill.—BANK.—New branch premises are to be erected in Broadway, N.W.7, for the National Provincial Bank, Ltd., by Messrs. Quennell, contractors, Hampstead-lane, N.6. Plans have been prepared by Mr. F. C. R. Palmer, F.R.I.B.A., the bank surveyor, and Mr. W. F. C. Holden, F.R.I.B.A., assistant surveyor.

Old Kent-road.—THEATRE.—A site at the corner of Old Kent-road and Sandgate-street, S.E.1, has been secured for the erection of a picture theatre and variety theatre to seat approximately 3,400 persons. Plans have been prepared by Mr. J. A. Emes, A.R.I.B.A., 21, Surrey-street, W.C.2.

Park-lane.—FLATS.—Application has been approved by the Westminster City Council for Messrs. Wimperis, Simpson & Guthrie, architects, for erection of a block of flats at Grosvenor House site, abutting on Upper Grosvenor-street Mount-street, Park-street, and Park-lane, which is to be the north block.

Park-lane. — HOTEL. — Dorchester House, Park-lane, has been sold to a syndicate which has plans ready for the erection of a £1,000,000 hotel.

Poplar.—FLATS.—Tenders are invited by the Poplar Borough Council for the erection of (a) 64 flats on a site in River-street, and (b) 16 flats on a site in Naval-row. Mr. Harley Heckford, Borough Surveyor, has prepared the plans.

Stoke Newington.—HOUSES.—Plans have been approved for the erection of new houses in Green-lanes, N. The architect is Mr. S. A. S. Yeo, A.R.I.B.A., 2, St. John-street, E.C.1.

Stepney.—HOSTEL. — The Improvements Committee recommend the London County Council to approve the sale of Chicksand-street School, to the Salvation Army for £8,500. The committee report that the Salvation Army propose to convert the school into an hostel for women.

St. James's-square. — BUILDING. — Messrs. Bovis, Ltd., of 43, Upper Berkeley-street, W.1, are carrying out building at the St. Ann's Villas end of St. James's-square, Notting Hill, W.11.

Wimbledon.—HOUSES.—Tenders are now being invited for the erection of 68 non-parlour type houses and 48 flats on land off Durnsford-road, for the Wimbledon Borough Council.

Walworth-road.—BANK.—The Westminster Bank, Ltd., propose to erect new branch premises at the corner of Walworth-road and Carter-street. Plans have been prepared by Messrs. Gunton and Gunton, Empire House, St. Martin's-le-Grand, E.C.2.

Willesden.—SCHOOL.—The tender of Messrs. J. E. Billing and Co., Ltd., 56, Victoria-street, S.W.1, has been accepted by the Education Committee for a new elementary school in Warren-road, North Circular-road, N.W. The plans have been prepared by Mr. F. Wilkinson, surveyor.

SOUTHEND MASTER BUILDERS' ASSOCIATION

THE annual dinner of the Southend Master Builders' Association and the Builders' Merchants' Association was held recently at Southend-on-Sea. Mr. L. H. Williams, President of the Southend section of the National Federation of Builders' Merchants, presided, and among those supporting were the Mayor and Mayoress, Councillor A. and Mrs. Bockett; Sir Charles Nicholson; Mr. D. H. Burles, President of the Southend Architects' Association; Mr. C. W. Pavey; Mr. I. E. Jones; Alderman G. Britain; and Mr. G. Sorrell.

Alderman Dowsett, proposing "The Building Industry," said Southend, in his opinion, owed its success and prosperity to the pioneers of the building industry who had built up the town. Perhaps things were not so prosperous as they were twelve months ago, but he believed that they could look with every confidence in the near future to the improvement of trade and the reduction of national taxation to give the necessary fillip to the building industry in their town.

Mr. D. H. Burles, responding, said, as an architect, he was glad to pay tribute to the work of the builders in the town. Mr. L. H. Williams, also responding, said the Master Builders' Association was established in 1911, and the Builders' Merchants' Association in 1907. Since their inception, both Associations had made their activities felt throughout the borough, and he believed that the borough had benefited by the activities of this combination. It was the only industry in the town, and it had, of course, developed the town to what it was to-day.

The Mayor, responding to the toast of "The Borough of Southend-on-Sea," said the object of the Corporation was to secure the success and prosperity of the town, and they looked to the building industry to erect such houses as would be attractive to those who came into the town for their health. On the other hand, those in the building industry looked to the Corporation so to enforce the building by-laws that they should not operate to hinder the proper development of their industry. He had felt that for some time past the building by-laws had been such that for the proper development of the town they required material alteration. Though he believed that as far back as 1923 the Corporation endeavoured to frame a new series of by-laws, those new by-laws were still before the Ministry of Health, but he was hopeful that, with a little energy on the part of those associated with the Corporation, it might be possible next month to be able to receive from the Ministry of Health the draft by-laws, subject to the approval of the Corporation. He felt that those by-laws should be submitted to those Associations which were intimately connected with building in the town.

Mr. C. W. Pavey submitted "The Ladies and Visitors," and Mr. J. E. Jones and Mrs. J. Sumner responded.

During the evening Mr. G. Sorrell handed a cheque for £137 to the Mayor, on behalf of the New Hospital Fund, as a contribution from the building industry.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alnwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashford (Kent)	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Aylsham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/2½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6	1/1½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/8½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Colchester	1/6	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Deal	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dovercourt	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/2½
E. Glam. (Mon. Val.)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1½
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hatfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Kettering	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leighton Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Malvern	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Margate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ramsgate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Reading	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Saffron Walden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Stratford-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½

For rates of wages in the Building Trade in Scotland, see page 356

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

FEBRUARY 27.

Aylesbury.—Decorations.—64 houses at South-court, for T.C. Wm. Harold Taylor, B.E. and S.

Bexley.—Centre.—At Broadway, Bexleyheath, to be used as a Child Welfare centre, for U.D.C. W. T. Howse, S. Dep. £1 1s.

Bouleenshera. — Building. — 2 classrooms at Bouleenshera Boys' and Girls' Schools. Rev. E. C Daly, Presbytery, Ballyheigue.

Bovey Tracey.—Building.—4 almshouses, for Bovey Tracey Town Trust. R. A. Rogers, architect, 7, Union-st., Newton Abbot.

Bury.—Houses.—120, upon land adjoining Proctor-st., for C.B. J. Ainsworth Settle, B.E. Dep. £5.

Charlton Kings.—Houses.—26, parlour-type, for U.D.C. F. W. Watson, architect, Lloyds Bank Chambers, High-st., Cheltenham. Dep. £2 2s.

Church Stretton.—Houses.—12, non-parlour-type, for U.D.C. E. J. Marsh, S. Dep. £2 2s.

Cudworth.—Church.—Primitive Methodist church, at White Cross-rd., Cudworth. A. Saxton, 35, Darfield-rd. Dep. £1 1s.

Dudley.—Cottages.—Two semi-detached cottages in Dibdale-lane, for B.G. Theo. W. Quarmby, C. Dep. £1 1s.

Dukinfield.—Houses.—5 pairs of semi-detached houses and 6 pairs of semi-detached parlour-type houses, for T.C. Housing Surveyor. Dep. £2 2s.

Edinburgh.—Extension.—To electric generating station, Westbank, Portobello, for T.C. E. J. MacRae, A.R.I.B.A., City Architect.

Finchley.—Building.—Pumping station, together with installation of pumping plant, construction of a rising main and incidental works, at Broughton-av., for U.D.C. P. T. Harrison, engineer, 9, The Hawthorns, N.3. Dep. £2.

Huddersfield.—Houses.—Erection of blocks of 8 houses on site off St. Andrew's-rd, Turnbridge, for C.B. B.A., 26, Ramsden-st.

Hull.—Laundry.—Also mortuary blocks, including drainage, etc., at Cottingham Castle estate, for T.C. D. Harvey, City Architect. Dep. £2 2s.

Manchester.—Heating.—Sectional boilers and heating and hot-water supply apparatus at Queen's-rd. car depot and 'bus garage, for T.C. City architect. Dep. £1 1s.

Morley.—Fencing.—Wood garden fences to 9 houses on Britannia-rd. estate, for T.C. F. Turner, B.E. and S.

Newcastle-on-Tyne.—Repairs and Supply of Materials.—To buildings in Northumbrian area. Comm. R.E., Northumbrian Area, Catterick Camp, Yorks

Newport.—Building.—Quarters for nursing staff and alterations to Springfield, for B.G. H. J. Griggs, A.R.I.B.A., architect, Metropolitan Bank-chambers. Dep. £2 2s.

Nottingham. — Painting. — Internal and external, at Forest Dene and Greendale House, Gregory-boulevard, for T.C. T. Wallis Gordon, City E. and S. Dep. £1.

Ryde.—Houses.—Ten pairs of semi-detached non-parlour type, for T.C. B.S.

Southend-on-Sea.—Intermediate School.—Erection of, and works incidental thereto, at Fairfax-drive, for the Corporation. Frank W. Smith, Architect to the Education Committee, Municipal Buildings, Southend-on-Sea. Dep. £2.

Staines.—Houses.—Erection of 28, for the R.D.C. D. C. Fidler, surveyor, London-rd., Ashford, Middlesex. Dep. £2 2s.

York. — Exchange.— Automatic telephone exchange at Dringhouses, for H.M.O.W. Contracts Branch, Charles-st., S.W.1. Dep. £1 1s.

FEBRUARY 28.

Bangor.—Lavatories.—At Ballyholme, for T.C. B.S. Dep. £1 1s.

Bishop's Stortford.—Houses.—Road and sewers and 24 houses on Dunmow-rd. housing estate, for U.D.C. R. S. Scott, E. and S. Dep. £3 3s.

Bridlington.—Bank.—Bank premises, Manor-st., for Lloyds Bank, Ltd. J. R. Earnshaw, architect and surveyor, Kingsgate. Dep. £2 2s.

Crompton.—Houses.—48 non-parlour, at Glebe-st. and Summer-st. housing sites, for U.D.C. F. T. Jones, E. and S. Dep. £3 3s.

Easington.—Alterations.—Also new male accommodation building at Poor Law Institution, for B.G. F. W. Girven, architect.

Edinburgh.—Exchange.—Telephone exchange at Davidson's Mains, for H.M.O.W. H.M. Office of Works, 122, George-st. Dep. £1 1s.

Hendon.—Porter's Lodge.—At Isolation Hospital, for the R.D.C. H. W. Rackham, S. Dep. £1 1s.

Houghton-le-Spring.—Houses.—East Rainton site, 14; New Herrington site, 4; Dubmire site, 16; for R.D.C. Housing Architects, 18, Church-st.

Lanchester. — Urinal. —At Esh Winning, for R.D.C. W. Cumming, S.

Poplar.—Weighbridge.—Installation of a new weighbridge, including builders' work in connection therewith, at St. Andrew's Hospital, Bromley-by-Bow, for the Poplar Board of Guardians. Harley Heckford, M.Inst.C.E., architect, Council Offices, High-st., Poplar. Dep. £1 1s.

Tonbridge.—Houses.—40 on the Cage Green estate, for the U.D.C. The Clerk, The Castle, Tonbridge. Dep. £2 2s.

FEBRUARY 29.

Birmingham.—Baths.—Public bathing establishment at Stratford-rd., Sparkhill, for T.C. Rd. Hoggins, Superintendent Engineer. Dep. £3 3s.

Curdworth.—Houses.—Two pairs of non-parlour subsidy houses in Water Orton-lane, Minworth, and three pairs of non-parlour subsidy houses in Curdworth-lane, Curdworth, for Birmingham, Tame and Rea District Drainage Board. H. C. Whitehead, Rookery-pk., Edrington.

Dublin.—Buildings.—(1) Reconstruction of building for Garda Siochana at Castleisland, Co. Kerry; (2) reconstruction of a building for Garda Siochana at Mountshannon, Co. Clare; (3) reconstruction of building for Garda Siochana at Pilltown, Co. Kilkenny; (4) erection of station for Garda Siochana at Dolla, Co. Tipperary, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1 each.

Edlington.—Heating.—Heating installation at Edlington junior mining centre, for West Riding E.C. Education Department, County Hall, Wakefield.

Hackney.—Extension to Boiler House.—At Institution, Sidney-rd., Homerton, for B.G. E. W. Harbour, Clerk. Dep. £5.

Hendon.—Demolition.—Of 1-7 (inclusive), Burnt Oak cottages, High-rd., Little Stanmore, for R.D.C. H. W. Rackham, S.

High Hoyland.—Re-slating.—Nave at church. J. Berry & Sons, architects and surveyors, 1, Market-walk, Huddersfield.

Hove.—House.—Refreshment house at 4, Western Lawns, for T.C. B.S.

Hove.—Supplying Goods, Hire and Street Masonry.—During the year commencing April 1 next, for B.C. B.S, Office.

Manchester.—Home.—Nurses' home at Crumpsall Infirmary, Crescent-rd., Crumpsall, for B.G. A. J. Murgatroyd, architect, 23, Strutt-st. Dep. £2 2s.

MARCH 1.

Barnsley.—Houses.—Three non-parlour type, at Wilthorpe-ave., for C.B. B.E.

***Bishops Stortford.**—Sunday Schools (Baptist).—Spalding & Myers, FF.R.I.B.A., 12, New-court, Lincoln's Inn, W.C.2.

Newcastle-upon-Tyne. — Houses.—For (1) 12 houses on Pendower housing estate; (2) 15 houses on the Cowgate housing estate, for T.C. Housing Architect, 18, Cloth Market. Dep. £1 1s. each.

Rochdale.—Purlins.—Stripping and fixing of new steel purlins on main boiler-house roof at generating station, Dane-st., for C.B. F. H. Rudd, engineer and manager.

Saintfield.—Enlargement.—Of Saintfield No. 1 public elementary school, for Ministry of Education, Northern Ireland. John M'Ilwaine, Saintfield.

Southampton.—School.—At Eastleigh, for the C.C. A. L. Roberts, C.A. Dep. £1 1s. payable to Hants C.C., crossed "Lloyds Bank, Ltd., Winchester."

***Various Places.**—Repairs and Materials.—War Dept. contracts. Term contracts from April 1, 1928, at stations in the North Midland area. Commanding R.E., 45, Friar Gate, Derby.

MARCH 2.

***Folkestone.**—Houses.—74, on the Canterbury-rd., Dover-rd. housing site, for the Corporation. A. E. Nichols, M.Inst.C.E., B.E. Dep. £2 2s.

Gloucester.—Repairs.—Ordinary works and repairs of buildings in Gloucester district, for H.M.O.W. Contracts Branch, H.M. Office of Works, King Charles-st., S.W.1. Dep. 10s. 6d.

Horsham. — Heating. — Low-pressure hot water heating at Post Office, etc., for H.M.O.W. Contracts branch, H.M. Office of Works, King Charles-st., S.W.1. Dep. £1 1s.

Shrewsbury.—Alterations.—At Borough police station, Swan-hill, for T.C. A. W. Ward, B.S.

Treharris. — Alterations. — To Nelson branch premises of the Treharris Workmen's Industrial Co-operative Society, Ltd. Johnson, Richards & Rees, architects and surveyors, Merthyr Tydfil.

MARCH 3.

Birmingham.—Alterations.—4 villa blocks alterations and additions to residence, sewage disposal works and drainage, etc., at Mental Hospital at Coleshill Hall, for T.C. H. H. Humphries, City E. and S. Dep. £5 5s.

Browney.—Painting.—Outside of club and cottage property, also inside of club property, for Workmen's Club, Ltd. W. Maddison, sec., Browney Social Club., 30, Browney-lane, Browney Colliery, near Durham.

***Coleshill Hall.**—Mental Hospital.—Erection of, for the Birmingham Corporation. C.E. and S., Council House, Birmingham. Dep. £5 5s.

Fochabers.—Additions.—Also alterations at jam works. W. A. Baxter, Highfield, Fochabers.

Halifax.—Arcade and Shops.—Tenders for the various trades, for the C.B. B.E., Crossley-st., Halifax. Dep. £2 2s.

***London.**—Repairing and Painting.—Exteriors of various schools, for the West Ham E.C. John H. Jacques, L.R.I.B.A., 61, West Ham-lane, Stratford, E.15. Dep. £1.

Stoke-on-Trent.—Roof.—New roof over Quadrangle at Stoke Market, and pointing of brickwork, etc., and restoration of decayed stonework at Fenton Library, for T.C. City S.

MARCH 5.

Aylsham.—Cottages.—Aylsham (Yaxley's-lane), 6; Banningham, 2; Swanton Abbott, 4; Wood Dalling, 4; for R.D.C. E. R. Larner, 24, King's-rd., East Dereham. Dep. 10s.

Conway.—Drill Hall.—Drill hall and company headquarters at Conway, for Caernarvonshire Territorial Army Association. Ll. Lloyd Jones, architect and surveyor, Lloyd's Bank-chambers, Caernarvon. Dep. £1 1s.

Essex.—School.—Erection of new elementary school at Dunton, for the Essex E.C. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford. Dep. £2 2s. to F. H. Owers, F.S.A.A., County Accountant, Duke-st., Chelmsford.

Grays.—Building.—New police station and court houses, for Essex C.C. Jno. Stuart, F.R.I.B.A., C.A. Dep. £2 2s.

London.—Offices.—Municipal offices in Spa-rd., Bermondsey, for Bermondsey B.C. E. Goff Clark, Town Clerk, Town Hall, Spa-rd., S.E.16. Dep. £3 3s.

London.—Houses.—68 houses off Durnsford-rd., Wimbledon, for Wimbledon B.C. B.E. and S.

***London.**—Houses and Flats.—Erection of various types, for the Wimbledon B.C. B.E. and S., Town Hall, Wimbledon.

Sandy.—Houses.—10, in the parish of Sandy, for the U.D.C. F. W. Western, Clerk. Dep. £2 2s.

Slough. — Destructor. — At Chalvey Pumping station, for U.D.C. A. Bromly, S.

Treeton.—Removal.—Of dividing wall in infants' department and other alterations at Treeton Council school, for West Riding E.C. A. Adcock, Divisional Clerk, Education Office, "Craigmore," Godstone-rd., Rotherham.

West Bromwich. — Building. — Electricity substation and transformer raft at electricity works, Old Meeting-st., for West Midlands Joint Electricity Authority. Chief Engineer, Phœnix-buildings, Dudley-rd., Wolverhampton. Dep. £3 3s.

MARCH 6.

Cwmbran.—Houses.—10, on Penywain housing site, for Llantarnam U.D.C. S.

London.—Building, etc.—Laying-out and draining and the erection of certain buildings in connection with proposed new recreation ground at Devonshire-rd., Colliers Wood, Merton, S.W.19, for Mitcham U.D.C. Surveyor.

Mitcham.—Buildings.—Laying-out and draining and erection of certain buildings in connection with proposed new recreation ground at Devonshire-rd., Colliers Wood, Merton, S.W.19, for U.D.C. Surveyor, Broadway House, London-rd., Lower Mitcham.

Nuneaton.—Painting.—Outside, etc., at Poor Law Institution, for B.G. H. N. Jepson, architect, Stratford-st.

MARCH 7.

Cardiff.—Conveniences.—Ladies' public convenience at recreation ground, Park-rd., Whitchurch, for R.D.C. W. Farrow, E., 20, Park-pl.

Clacton.—Alterations.—Also additions to child welfare centre, Skelmersdale-rd., for U.D.C. S.

Clacton.—Additions.—To conveniences in West Cliff, near Jetty, for U.D.C. S.

Clacton.—Shelters.—2 shelters on West Greensward, for U.D.C. S.

North Walsham.—Additions.—Also additions to Paston school. S. J. Wearing, F.R.I.B.A., 3, Redwell-st., Norwich. Dep. £1.

Rochford.—Telephone Exchange.—For the Commissioners. Contracts Branch, H.M.O.W., King Charles-st., S.W.1. Dep. £1 1s.

St. Boswells.—Offices.—Education offices, Newtown St. Boswells, for Roxburgh E.C. Reid & Forbes, architects, 7, Ainslie-place, Edinburgh.

Stoke-on-Trent.—Repairs.—To houses at Longton, for T.C. E. B. Sharpley, T.C.

Swords.—Building.—Construction and fitting of new sanitary blocks and drainage scheme at new borough schools, Swords, Co., Dublin, for Board of Governors. Francis P. Russell, architect, 7, D'Olier-st., Dublin. Dep. £1 1s.

MARCH 8.

Newcastle-on-Tyne.—Telephone Exchange. — At Benton, for the Commissioners. Contracts Branch, H.M.O.W., King Charles-st., S.W.1. Dep. £1 1s.

Stepney.—Coal Storage Pits, Foundations and Concrete Walls.—Construction of, at Limehouse electricity generating station, Narrow-st., Stepney, for the B.C. Bernard J. Belsher, M.I.C.E., M.I.M.E., B.E. and S., Municipal Offices, Raine-st., E.1. Dep. £5 (Treasury notes).

MARCH 9.

London, E.14.—Flats.—80, for the Poplar B.C. B.S. Dep. £3 3s.

London.—Pressure Filters and Appurtenant Works.—Installation of, at new swimming bath, for the Deptford B.C. B.E. and S. Dep. £1 1s.

London.—New Swimming Bath.—At Lauriegrove, for Deptford B.C. B.E. and S. Dep. £2 2s.

Pontefract and Selby.—Works and Materials.—For a period of 3 years. War Dept. Contract Comm., Royal Engr., R.E. Office, 13, Wenlock-ter., York.

MARCH 10.

Cheadle and Gatley.—Houses.—40, on Oak-rd. housing site, Cheadle, and 20 on Adswood housing site, Adswood, for U.D.C. S. Dep. £1 1s.

MARCH 12.

***Macclesfield.**—Working-class Dwellings.—On Coalpit-lane housing estate, for the B.C. Edward Hamson, A., Town Hall. Dep. £2.

MARCH 13.

Bentley-with-Arksey.—Conveniences.—Also alterations, at Arksey Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Clitheroe.—Additions.—Alterations and additions to Sawley Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Gosforth.—Houses.—6 two-roomed, on Coxlodge housing estate, for U.D.C. Geo. Nelson, E. and S

Maltby.—Extension.—Extension of low-pressure hot-water installation, and installation of electric lighting, at Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

MARCH 14.

***London.**—Building Works.—Extension and completion of electricty sub-station for Metro. B.C. of Hackney. B. Elec. E., 18-24, Lower Clapton-rd., E.5. Dep. £2 2s.

West Bromwich.—Heating.—Electric lighting of medical officers', etc., quarters, and hot-water and heating services, medical officers', etc., quarters, at Hallam Hospital, for B.G. Edwards & Shaw, Consulting Engineers, 105, Colmore-row, Birmingham. Dep. £2 2s.

MARCH 15.

Dewsbury.—Alterations.—23, The Town, Thornhill, 1 privy conversion and 75 to 105, Overthorpe-rd., Thornhill, 16 privy conversions, for C.B. Chief Sanitary Inspector.

Walsall.—Hospital.—At Goscote-lane, for the C.B. J. Taylor, B.E. and S. Dep. £3 3s.

MARCH 17.

***Blackburn.**—Elementary school and works at Roe Lee Park, for C.B. H. M. Webb, B.Sc.(Eng.), London, Assoc.M.Inst.C.E. B. and Water E., Town Hall, Dep. £2.

***Ilford.**—School Buildings.—At Barkingside, for the B.C. H. Shaw, A. to E.C. Dep. £5 5s.

MARCH 19.

Beckenham.—School.—For the U.D.C. Clerk. Dep. £5 5s.

***London.**—Dwellings.—Two blocks, for the L.C.C., at Islington. Architect to the Council, The County Hall (Room No 3), Westminster, S.E.1. Dep. £2.

MARCH 22.

Reading.—Houses.—34, on sites in Westbourne-terr., Gosbrook-rd., Auckland-rd., and Wykeham-rd., for C.B. Housing Architect. Dep. £2 2s.

MARCH 24.

Bakewell.—Wiring.—Electric lighting, wiring, and accessories about to be installed at Poor Law Institution, for B.G. Alfred Hawes. Dep. £1 1s.

MARCH 31.

Skeirinoe.—Building.—Concrete beacons on Skeirinoe and Guanachan Rocks in The Minch, for Northern Lighthouses Commissioners, D. A. Stevenson, 84, George-st., Edinburgh. Dep. £2 2s.

NO DATE.

Aberporth.—House.—At Parcllyn, Aberporth, for H. L. Jones, of Pennarissaf. Plans from H. L. Jones, Arfryn, Parcllyn.

Barrhead.—Houses.—222, for T.C. J. Pattison, T.C.

Brighton.—Building.—New Bernhard Baron Casualty Department, at Royal Sussex County Hospital, for Committee. F. T. Cawthorn, L.R.I.B.A., 170, North-st.

Bristol.—Alterations.—To Christ Church school, Princess Victoria-st., Clifton, to include new windows and builder's work, electric light, heating, painting and decorating. Major Biggs-Davison, 10, York-gardens, Clifton.

Castleford.—Roof.—Of Market Hall, for U.D.C. D. Firth, E. and S.

Dewsbury.—Alterations.—To late "Horse and Jockey," 62, High-st., Westtown. Secretary, Irish National Club, 7, Middle-rd., Westtown, Dewsbury.

Doncaster.—Re-erection.—Removal of Cricket Pavilion, Bennetthorpe, Doncaster, to new site on Town Field, and re-erecting same; also erection of conveniences, etc. A. Gill Brown & Son, surveyors, 30, Hallgate.

Near Doncaster.—Stores.—At Thorne Moorends, for Doncaster Mutual Co-operative and Industrial Society, Ltd. T. H. Johnson, architect, 20, Priory-place, Doncaster. Dep. £5 5s.

Forton.—Bungalow.—At Clevelys Bank, Forton, Garstang. E. S. England, A.R.I.B.A., 12, Clegg-st., Oldham. Dep. 10s. 6d.

Liverpool.—Reconditioning.—Premises at Bramley Moore Dock, Liverpool, previously used as a Generating Station. W. T. D. Grundy, General Manager, Liverpool Overhead Railway, 31, James st. Dep. £1 1s.

***London.**—Building, etc.—Persons and firms wishing to be on Council's prescribed lists for tendering for various works, apply Architect to L.C.C., The County Hall, Westminster Bridge, S.E.1.

Parkgate.—Painting.—Interior of Bethel Church, Parkgate. W. Bailey, Rawmarsh Hill, Parkgate.

Wakefield.—Conveniences.—At Maudeline-bridge, Westgate, for Corporation. City S.

***Wembley.**—Cinema, Dance Hall, Shops, etc.—At High-rd., Wembley, Field & Stewart, architects and surveyors, 1, Christchurch-av., Wembley. Dep. £5 5s.

Yeovil.—Demolition.—Of District Co-operative Society, Ltd., business premises in Middle-st. Petter & Warren, FF.R.I.B.A., chartered architects, Old Sarum, Yeovil.

MATERIALS, ETC.

FEBRUARY 27.

Beddington and Wallington.—Road Materials.—For U.D.C. S. F. R. Carter, E. and S.

Billericay.—Highway Materials.—For R.D.C. F. E. Ennals, S

Burley-in-Wharfedale.—Road Materials.—For U.D.C. S.

Chislehurst.—Highway Materials.—For U.D.C. C.

Clayton-le-Moors.—Highway Materials.—For U.D.C. A. Dodgeon, S.

Cowbridge.—Highway Materials.—For R.D.C. Vivian S. Gwyn, C.

Dartford.—Tarred Slag.—For U.D.C. C.

Derby.—Builder's Materials.—For C.B. C. A. Clews, B.S.

Dunstable.—Highway Materials.—For T.C. W. F. Wilkins, B.S.

Eye.—Granite, etc.—For T.C. H. Warnes, T.C.

Hartismere.—Granite and stone.—For R.D.C. C.

Havant.—Cement, etc.—For U.D.C. S.

Horsham.—Road Materials.—For U.D.C. C. G. Atkinson, S.

London.—Highways Materials.—For Finsbury B.C. T.C.

Long Eaton.—Road Materials.—For U.D.C. H. Raven, S.

Margate.—Builder's Materials.—For T.C. E. A. Borg, B.E.

Middlesbrough.—Road Materials.—For C.B. S. E. Burgess, B.E. and S.

Penarth.—Road Materials.—For U.D.C. E. I. Evans, S.

Richmond (Yorks).—Whinstone.—For R.D.C. T. W. Beadle, S.

Samford.—Granite.—For R.D.C. C.

Smethwick.—Highway Materials.—For C.B Roland Fletcher, B.E. and S.

Soyland.—Slag.—For U.D.C. W. Whitehead, S.

Sunderland.—Road Materials.—For C.B. B.S.

Surbiton.—Cement, etc.—For U.D.C. H. T. Mather, S.

Tipton.—Highway Materials.—For U.D.C. S.

Tenterden.—Granite, etc.—For T.C. W. L. C. Turner, B.S.

FEBRUARY 28.

Acton.—Granite, etc.—For T.C. T.C.

Battersea.—Materials, etc.—Tenders for materials, etc., for 3, 6 and 12 months from April 1 next for the Borough Council. Town Hall, Lavender Hill, S.W.1.

Dublin.—Pipes.—Cast-iron pipes, castings and valves, for C.B. G. J. Sherlock, T.C.

Enfield.—Road Materials.—For U.D.C. E. and S.

Great Ouseburn.—Road Materials.—For R.D.C. H. C. Paine, S.

Hadleigh.—Road Materials.—For U.D.C. C.

Llanelly.—Stones.—For R.D.C. C.

Rugby.—Road Materials.—For R.D.C. J. E. Weeks, S.

Sleaford.—Tarmacadam, etc.—For U.D.C. C.

Smallburgh.—Road Materials.—For R.D.C. W. L. Lewis, District Surveyor.

FEBRUARY 29.

Alnwick.—Highway Materials.—For U.D.C. G. K. Taylor, Town Surveyor.

Bingham.—Highway Materials.—For R.D.C. C.

Bishopthorpe.—Broken Whinstone.—For R.D.C. C. C. Lucas, C.

Ealing.—Road Materials.—For T.C. W. R. Hicks, B.S.

Goole.—Road Materials.—For U.D.C. J. H. Castle, E. and S.

Hawarden.—Road Stones.—For R.D.C. H. Hughes, S.

Hollingbourne.—Road Materials.—For R.D.C. C.

Liverpool.—Builders' Materials, etc.—For T.C. City E.

Salisbury.—Road Materials.—For the R.D.C. E. Mould, C.

Skirlaugh.—Whinstone, etc.—For R.D.C. J. A. Andrews, S.

Upholland.—Chippings, etc.—For U.D.C. C.

MARCH 1.

Barnet.—Road Materials.—For U.D.C. E. and S.

Braintree.—Highway Materials.—For R.D.C. C. V. Bright, Surveyor of Highways.

Bredbury and Romiley.—Road Materials.—For U.D.C. C.

Burnley.—Highway Materials.—For R.D.C. F. Hewitt, S.

Chippenham.—Highway Materials.—For R.D.C. A. H. Lapham, Highway Surveyor.

Hampton.—Road Materials.—For U.D.C. S. H. Chambers, S.

Hendon.—Granite, etc.—For R.D.C. H. W. Rackham, S.

Lichfield.—Road Materials.—For R.D.C. E. and S.

Portland.—Broken Granite.—For U.D.C. R. Davison, E. and S.

Marple.—Road Materials.—For U.D.C. D. J. Diver, S.

Southend-on-Sea.—Road Materials.—For C.B. Robert H. Dyer, B.E.

Thakeham.—Road Materials.—For R.D.C. G. W. Curtis, S.

Uxbridge.—Highway Materials.—For R.D.C. E. E. T. Bolton, E. and S.

Watford.—Highway Materials.—For T.C. W. W. Newman, B.E.

Wellingborough.—Highway Materials.—For U.D.C. R. Stevenson, E. and S.

Wellingborough.—Road Materials.—For U.D.C J. Chaston, C.

West Lancashire.—Highway Materials.—For R.D.C. R. Rosbotham, S.

MARCH 2.

Cardiff.—Builders' Materials.—For B.G. C.

Heywood.—Road Materials.—For T.C. J. B. Nuttall, B.S.

MARCH 3.

Barry.—Builder's Materials.—For U.D.C. E. R. Hinchsliff, S.

Broadstairs and St. Peter's.—Granite.—For U.D.C. H. Hurd, S.

Cardiff.—Mountain Limestone.—For R.D.C. W. Warren, C., 20, Park-pl.

Cardiff.—Limestone.—For R.D.C. W. Farrow, E., 20, Park-place.

Earby.—Highway Materials.—For U.D.C. H. Pritchard, E. and S.

East Ham.—Highway Materials.—For Corporation. T.C.

Glasgow.—Pipes.—650 tons of cast-iron pipes, varying from 9 in. to 4 in. dia., for T.C. Engineer and Manager of the Water Department, 50, John-st.

Leeds.—Sand, etc.—For Cleansing Committee. S. Thornley, Superintendent.

Melford.—Road Materials.—For R.D.C. A. F. Kilner, S.

Newark.—Road Materials.—For R.D.C. R. Oakden, District S.

Ossett.—Road Materials.—For T.C. B.S.

Skipton.—Highway Materials.—For R.D.C. A. Rodwell, S.

Wetherby.—Highway Materials.—For R.D.C. A. Suttel, S.

MARCH 5.

Clutton.—Stone.—For R.D.C. T. Orchard, S.

Dunmow.—Road Materials.—For R.D.C. P. E. Furlong, Highway Surveyor.

Sevenoaks.—Cement, etc.—For U.D.C. S.

Stoke-on-Trent.—Highway Materials. City S.

Thingoe.—Stone.—For R.D.C. C. D. Bright, S., 65, Churchgate-st., Bury St. Edmunds.

MARCH 6.

Bangor.—Sand.—For T.C. J. Millikes, T.C.

Belfast.—Plumbers' Materials.—For B.G. C.

Epping.—Highway Materials.—For R.D.C. F. Forrester, S.

Horsham.—Road Materials.—For R.D.C. W. R. Guilford, S., 42, Albion-terr.

Kingston.—Builders' Materials.—For B.G. C.

Maltby.—Road Materials.—For U.D.C. M. R. Jones, E. and S.

MARCH 7.

Clacton-on-Sea.—Road Materials.—For U.D.C. C.

Dewsbury.—Road Materials.—For C.B. H. Dearden, B.E.

Dover.—Highway Materials.—For Harbour Board. Rutley Mowll, Register of Dover Harbour Board.

Gravesend.—Stone, etc.—For T.C. F. T. Grant, E. and S.

Morley.—Highway Materials.—For T.C. F. Turner, B.E.

Peterborough.—Highway Materials.—For T.C. W. H. A. Court, City E. and S.

MARCH 8.

Northampton.—Road Materials.—For C.C. E. A. Black, C.S.

Shifnal.—Road Materials.—For R.D.C. C. H. Abbey, S.

Tamworth.—Granite.—For R.D.C. H. L. Kent, E. and S.

MARCH 9.

Birkenhead.—Pipes, etc.—For Corporation. Water Engineer, 19, Charlesville.

MARCH 10.

Chesterton.—Granite.—For R.D.C. James Dunn, District S.

Darlington.—Road Materials.—For C.B. B.S.

Nelson.—Road Materials.—For T.C. B.E. and S.

Runcorn.—Road Materials.—For R.D.C. J. L. Beckett, E. and S.

MARCH 12.

Boston.—Road Materials.—For T.C. D. G. Cockrill, B.E.

Epsom.—Road Materials.—For R.D.C. T. E Ware, S.

Gellygaer.—Limestone, etc.—For U.D.C. F Read, E. and S.

***Halifax.**—Works and Material.—For a period of three years, at Depot, Barracks, from April 1. War Dept., Contracts Comm., R.E., 13, Wenlock-terr., York.

St. Thomas.—Highway Materials.—For R.D.C. J. S. Madge, S., Brooklands, Heavitree, Exeter.

Wrexham.—Builder's Materials.—For T.C. J. England, B.S.

MARCH 17.

Coulsdon and Purley.—Highway Materials.—For U.D.C. G. A. Ballard, S.

MARCH 21.

Wortley.—Road Materials.—For R.D.C. F. Thurlby, E. and S.

MARCH 26.

Ilkeston.—Granite, etc.—For Corporation. B.S.

MARCH 28.

Dover.—Ragstone.—For R.D.C. C. W. Whitewood, S.

ENGINEERING, IRON AND STEEL.

FEBRUARY 27.

Ballybofey.—Water Supply.—Construction of water works for the towns of Ballybofey, Stranorlar and the County Home at Stranorlar, for Donegal County Board of Health and Public Assistance. J. J. S. Barnhill & W. J. Doherty, engineers, 12, Castle-st., Derry.

Belfast.—Tank.—Petrol storage installation, consisting of one storage tank and one self-measuring pump, at Purdysburn Fever Hospital, for C.B. R. Meyer, T.C.

Donegal.—Water Supply.—Improvements to Donegal water works, for County Board of Health and Public Assistance. W. J. Doherty, E., 12, Castle-st., Derry.

Rackmill.—Reconstruction.—Of bridge over River Devon at Rackmill, near Dollar, for Clackmannan C.C. Blyth & Blyth, civil engineers, 135, George-st., Edinburgh. Dep. £3 3s.

FEBRUARY 29.

Tisbury.—Water Supply.—2,800 yds. of 3-in. steel tubing; also 28 tons of 3-in. cast-iron water main, and 15 cwt. of 3-in. special castings and sluice valves, air valves, hydrants and standpipes, and 2,800 yds. of 3-in. steel tubing and 1,500 yds. of 3-in. cast-iron main, at Hindon, for R.D.C. A. J. Martin, 108, St. George's-sq., Westminster, S.W. Dep. £2 2s.

MARCH 2.

Gloucestershire.—Piling.—For carrying out following work, where main road runs alongside River Severn, between the Over and Maisemore Bridges. (1) Timber piling over a length of approximately 100 lin. ft., together with retaining wall and anchorages; (2) construction of a timber groyne projecting from bank of the River Severn, for C.C. E. S. Sinnott, C.S.

MARCH 5.

Essex.—Reconstruction.—Of Stratford St. Mary bridge, for C.C. William H. Morgan, C.S. Dep. £2 2s

Glamorgan.—Main.—Providing and laying of about 4,900 lin. yds. of 14-in. dia. cast-iron pipes, together with necessary valves, and other appurtenant works, including two river crossings, from Bridgend to Schwyl, for Water Board. Thomas & Morgan & Partners, civil engineers, Pontypridd. Dep. £5 5s

MARCH 8.

Larne.—Water Supply.—Providing and laying 1,850 lin. yds. of 4-in. cast-iron water pipe, together with necessary valves, hydrants, fountains, etc., and construction of sedimentation tank, 2 filters and storage tank, near Carrickfergus, for R.D.C. S. Robinson, E., Victoria-st.

MARCH 12.

Stoke-on-Trent.—Tanks.—Grit chambers, storm tanks, pumping station and general works at Trent Vale, and for construction of detritus and sedimentation tanks, bacteria beds, humus tanks, formation of roads, and other incidental work, at Strongford, for T.C. W. H. Makepeace, City Sewage Engineer. Dep. £5 5s.

MARCH 13.

Enfield.—Sewers.—Construction of 1,080 lin. yds. of 9-in. cast-iron pipe sewer, 631 lin. yds. of 9-in. stoneware pipe sewer, and 427 lin. yds. of 6-in. cast-iron pipes, together with manholes, hatch boxes, pumping station and other incidental works, being the completion of a drainage scheme at Brimsdown, for U.D.C. H. R. Crabb, S. Dep. £2 2s.

ROAD, SEWERAGE, AND WATER WORKS.

FEBRUARY 27.

Beddington and Wallington.—Making-up.—Demesne-rd., from Croydon-rd. to northern boundary of Council's Bute-rd. housing estate, for U.D.C. S. F. R. Carter, E. and S. Dep. £1 1s.

Belfast.—Road.—About 220 perches of new road between Glynn and Larne, to replace a length of narrow winding roadway on first-class road A2; 40 ft. of retaining wall on east side of Ballycarry-st., at Mr. Bailie Stewart's property; and rebuilding about 33 lin. yds. of retaining and parapet wall at Bellahill, at lands of Mr. Caldwell, for Antrim C.C. S. Robinson, assistant surveyor, Victoria-st., Larne.

Cullompton.—Widening.—Also reconstruction of road at Cullompton, for Devon C.C. F. E. Simpson, C.S., 21, Southernhay West, Exeter. Dep. £5 5s.

Cults.—Mains.—Extension of water and sewer mains between Kirk Brae and Derncleugh, near Cults, comprising supply and laying of water and sewer pipes, and relative works, for Aberdeen District Committee of C.C. Henderson & Nicol, chartered civil engineers, 21, Bridge-st., Aberdeen.

Devon.—Widening.—Reconstruction and widening of Exeter-Plymouth-rd. between Kennford and Haldon. F. E. Simpson, C.S., 21, Southernhay West Exeter. Dep. £5 5s.

Finchley. — Making-up. — Of Cyprus-gardens; Hendon-av. (second portion); Lansdowne-rd. (second portion); Wentworth-park (first portion); Ridgeview-rd.; Cromwell-rd.; Abingdon-rd., for U.D.C. T. Harrison, E., 9, The Hawthorns, Regents Park-rd., N.3. Dep. £3.

Glasgow.—Sewer.—9-in. pipe sewer in Crookston-rd., for T.C. D. Stenhouse, T.C.

Ilkeston.—Sewers.—Laying of sewers and construction of about 600 lin. yds. of new roads on Central housing estate, for T.C. B.S. Dep. £1 1s.

Portslade-by-Sea.—Sewers.—Roads and sewers on site on south side of Shelldale-rd., for U.D.C. D. V. Howard, architect and surveyor. Dep. £1

Trowbridge.—Road Work.—In Dursley-rd., for U.D.C. Geo. W. J. Clark, E. and S. Dep. £2.

FEBRUARY 28.

Bray.—Sewers.—Construction of sewers, manholes, flushings, tanks, and other auxiliary works in connection with a scheme of sewerage for Little Bray, for U.D.C. E. M. Murphy, S., 27, Molesworth-st., Dublin. Dep. £5 5s.

Foleshill.—Extensions.—Supplying and laying 3-in. cast-iron pipes in Smorrall-lane, Bedworth, and same in New-st., Collycroft, for R.D.C. A. E. Newey, E. and S. Dep. £1 1s.

Heston and Isleworth.—Making-up.—Bulstrode-rd. (part of), for U.D.C. J. G. Carey, S. Dep. £2 2s.

FEBRUARY 29.

Braddan (I. of Man).—Sewer.—For Spring Valley Sub-village area, for Braddan Parish Commissioners. G. Kay and Son, architects, 22, Athol-st., Douglas. Dep. £1 1s.

Hendon.—Repairs.—Also resurfacing, with tarpaving, footpaths on Chandos estate, Whitchurch-lane, Little Stanmore, for R.D.C. H. W. Rackham, S.

Larne.—Laying-out.—Of ground, about 2½ acres in extent, adjoining shore at Waterloo, for recreation purposes, for U.D.C. Town Surveyor.

Rathdown.—Sewage.—Construction of sewers and sewage purification works, for R.D.C. P. H. McCarthy, 26, Lower Leeson-st., Dublin. Dep. £3 3s.

MARCH 1.

Ealing.—Making-up.—Birkbeck-way and Hillbeck-way, Greenford, for T.C. W. R. Hicks, B.E.

Hornsey.—Making-up.—Sheldon-av., for T.C. W. H. Adams, B.E. and S.

Mullingar.—Sewer.—To connect County Home and Hospitals, Mullingar, with main sewer, for County Westmeath Board of Health and Public Assistance. P. H. McCarthy, Civil Engineer, 26, Lower Leeson-st., Dublin. Dep. £5 5s.

Wanstead.—Making-up.—Of Langley-drive and also Rutland-rd., with waterbound granite macadam tarsprayed and tarpaved footways, for U.D.C. E. and S.

MARCH 2.

Irlam.—Reconstruction.—Various materials for sewage works reconstruction, for U.D.C. E. and S.

Leicestershire.—Reconstruction.—Of main roads in bituminous materials, for C.C. J. E. Blackwall, C.S.

MARCH 3.

Easthampstead.—Sewer.—Connecting 28 houses at Roebuck, Binfield, to main sewer, for R.D.C. E. D. Berry, C. Dep. £2.

Mablethorpe.—Making-up.—George-st., for Mablethorpe and Sutton U.D.C. R. W. Maughan, E. and S. Dep. £2 2s.

MARCH 5.

Coseley.—Sewerage.—Construction of about 9,800 yds. of stoneware and cast-iron sewers, varying in size from 6 in. to 15 in. diam., manholes, and other appurtenant works, for U.D.C. Berrington & Son, engineers, Prudential-chambers, Lichfield-st., Wolverhampton. Dep. £5 5s.

Godstone.—Sewers.—Also sewage disposal work at South Godstone, for R.D.C. S. F. Evershed, E. Dep. £3 3s.

Hertford.—Sewers.—Stoneware pipes, etc., in outfall and other foul and surface water sewers, cast-iron water mains, and road work generally in connection with housing estate, for T.C. B.S. Dep. £5 5s.

Romford.—Drainage.—Redrainage of Romford Institution, for B.G. Harrington & Evans, architects, Western-chambers, South-st. Dep. £3 3s.

Slough.—Sewer.—470 yds. of 15-in. dia. stoneware pipe sewer on Baylis house estate, for U.D.C. A. Bromly, E.

MARCH 6.

Bangor.—Reconstruction.—Abbey-st., Upper Main-st., Hamilton-rd., Bingham-st., for T.C. J. Milliken, T.C. Dep. £5.

Belfast.—Sewer.—3,478 lin. ft. of reinforced concrete outlet sewer, divided by diaphragm walls into 3 culverts, each measuring 6 ft. 6 in. square internally, to be constructed in Cofferdam through Tidal Lands in Belfast Lough, for C.B. W. H. Stephens & Son, chartered surveyors, 13, Donegall-sq. North. Dep. £5 5s.

Sligo.—Piping.—For (1) 1,430 yds. 3-in. c.-i. turned and bored piping, B.S.S. Class C.; (2) 130 yds. 1-in. steel, screwed and socketted piping, tested 200 lbs. hydraulic pressure, for T.C. J. Shea, T.C.

Steyning East.—Sewerage.—Carrying out certain sewerage and street works in Patcham, for R.D.C. G. W. Warr, E. and S.

MARCH 7.

Cardiff.—Sewers.—Road improvement works and surface water sewer in Pantbach-rd., Tyn-y-Parc-rd., and Philog-rd., for R.D.C. W. Farrow, S., 20, Park-pl.

Cardiff.—Sewerage.—533 lin. yds. of 9-in. earthenware and other pipe sewers with manholes and other works in Parish of Van, for R.D.C. W. Farrow, E., 20, Park-pl. Dep. £2.

Fulwood.—Mains.—7,500 yds. of 10-in. cast-iron water mains with valves and appurtenances, and carting, laying and fixing mains and appurtenances in connection with Barnsfold and Haighton reservoirs in the townships of Goosnargh and Whittingham, for U.D.C. G. J. Gibbs, M.I.Mech.E., E., 7, Lune-st., Preston. Dep. £2 2s.

MARCH 12.

Maldens and Coombe.—Making-up.—Nelson-rd. and Grayham-cres., New Malden, and Kingscote-rd, for U.D.C. R. H. Jeffes, E. and S. Dep. £2 2s.

Southampton.—Road.—Reconstructing Radcliffe-rd., Northam, for C.B. B.E. Dep. £1 1s.

NO DATE.

Crosby (I. of Man).—Sewer.—20 yds. of 9-in. sewer, with manhole complete, at Crosby, for Marown Parish Commisioners. F. W. Flanagan, chairman.

Rotherham.—Removal.—Excavating and removal of surplus earth, etc., from vacant site in Ferham-rd. D. B. Jenkinson, A.R.I.B.A., architect, Imperial Buildings.

Auction Sales, Tenders, etc.

FEBRUARY 28.

***Sevenoaks.**—Norbury Smith & Co. will sell in lots, Quarry House, Kippington-rd., interior and exterior fixtures and fittings. The fabric of the mansion will be sold for demolition. Auctioneers, 8, Conduit-st., W.1.

FEBRUARY 28 AND TWO FOLLOWING DAYS.

***London.**—Charles R. Davis and Co., by order of the Liquidator, re S. Emanuel, Ltd., at 56, Park-st., Camden Town, N.W.1, cabinet manufacturers' stock-in-trade, plant, machinery, etc. Auctioneers, 285, Borough High-st., London, S.E.1.

MARCH 1.

***Hendon.**—Blessley & Spyer, at "Downage," Pearson-st., Hendon, building materials from demolition of above. Auctioneers, 321 and 323, Finchley-Rd., N.W.3.

MARCH 2.

***Middlesbrough.**—Harold Hood will sell re J. G. Porteous, Ltd. (J. G. Porteous, deceased), Emmerson-st., The Avenue, Linthorpe, machinery, plant, stock, portable buildings, etc. Auctioneers, Borough-rd. E., Middlesbrough.

MARCH 6.

***London.**—Joseph Hibbard & Sons, at City-rd. Bridge, E.C.1. By order of Messrs. A. Bridgman & Co., Ltd., on removal to larger premises. Plant and stock of box and packing case makers, comprising saw mill plant by well-known makers. Auctioneers, 15, Newington Green, Islington, London, N.16.

***London.**—Joseph Hibbard & Sons, by order of Messrs. Joseph Wallis & Sons, Ltd., who have sold the premises; upon the premises, 53b, Carysfort-rd., Albion-rd., stock and plant of pianoforte manufacturers. Auctioneers, 15, Newington-green, Islington, N.16.

MARCH 7.

***Orpington.**—Perry and Phillips, Ltd., Ladywood Mansion, Orpington, Kent. Fixtures and fittings, greenhouses, also fabric of the mansion, lead, etc. Auctioneers, 59, High-st., Bridgnorth, Shropshire.

***Westcliff-on-Sea.**—Henry Butcher, Hall & Co. Stock-in-trade of builders' hardware merchant. Auctioneers, 63 and 64, Chancery-lane, W.C.2.

MARCH 13 AND FOLLOWING DAYS.

***London.**—Joseph Hibbard & Sons. By order of Messrs. William Marshall & Son, Ltd., owing to expiration of lease. Hardwood sale upon the premises, 256 to 260, Old-st., E.C.2. Auctioneers, 15, Newington-green, Islington, N.16.

Public Appointments.

FEBRUARY 27.

***Newcastle-upon-Tyne.**—Clerk of Works required. Executive Comm., North-East Coast Exhib., for Buildings at Newcastle. C. P. Hainsworth, Gen. Manager.

FEBRUARY 29.

***Oxford.**—City Estates Surveyor required by the City Council. A. Holt, T.C., endorsed "City Estates Surveyor."

MARCH 1.

***London.**—Clerk of Works required by the Guardians of the Southwark Union. A. P. Stanwell Smith, Clerk, 50-51, Ufford-st., Blackfriars-rd., S.E.1.

MARCH 3.

***Sutton (Surrey).**—Clerk of Works (Temporary) required by the U.D.C. Wm. Hedley Grieves, E. and S., Municipal Offices.

MARCH 5.

Durham.—Assistant Architect required by C.C. Dir. of Edu., Shire Hall.

Wolverhampton.—Superintendent of Educational Buildings. T. A. Warren, Director of Education, North-st.

MARCH 6.

Essex.—Architectural Assistant required on the temporary staff in the County Architect's Dept. by the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford.

MARCH 7.

***Colchester.**—Temporary Architectural Assistant required by the B.C. Harold Collins, B. E. and S.

MARCH 24.

Kendal.—Clerk of Works required by B.C. F. W. Oxbery, B.S.

MAY 24.

London. — Forthcoming Examination. — Male cartographers in the hydrographic dept. of the Admiralty (19-25, with extension in certain cases). The Secretary, Civil Service Commission, Burlington-gardens, London, W.1.

NO DATE.

***Nigeria.**—Foremen of Works (10) required by Govt. of Nigeria. Apply at once, Crown Agents for the Colonies, 4, Millbank, S.W.1, quoting M/262.

***Kenya.**—Foremen (6) required by the Govt. of Kenya Colony. Apply at once, Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/434.

***Kenya.**—Carpentry Instructor required by Govt. of Kenya. Apply at once, Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/89.

Manchester Clerks of Works.

With regard to the article under this heading in our last issue, we are asked to state that this year's President of the Clerks of Works' and Building Foremen's Association is Mr. A. C. Nicholls, and the Vice-President Mr. H. E. Kirkman. The next lecture of the Association will be given on March 5.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

Ashby.—U.D.C. recommend that Swadlincote and Ashby Joint Water Committee be empowered to invite tenders and proceed as soon as possible with work of constructing a new reservoir for area on a site selected at Hartshorne. It is anticipated that whole scheme will cost £20,000.

Ashford (Derbyshire).—A war memorial institute is to be erected on a site opposite post office. E. M. Longsdon, of Little Longstone, architect.

Baldock (Herts).—Plans been prepared for restoration of Ashwell Parish Church, at £5,000. W. Weir, architect, The Beeches, Stotfold-rd., Letchworth, Herts.

Barnsley.—T.C. decided to build 198 houses by direct labour—132 semi-detached with 3 bedrooms at £382 each, and 66 semi-detached with 2 bedrooms at £356 each.

Batley.—T.C. are to erect 30 houses on Laurelgrove site, at £11,510.

Becontree.—Plans been prepared for further block of shops and flats in Green-lane, on the L.C.C. housing estate. E. Meredith, A.R.I.B.A., architect, 7, Goodmayes-rd., Goodmayes.

Birmingham.—Works are to be erected at King's Norton by Triplex Safety Glass Co., Ltd., of Albemarle-st., W.1. Plans by S. N. Cooke, F.R.I.B.A., Queen's College, Paradise-st.

Bradford.—The Children's Hospital Committee contemplate extensions, at £4,000.

Bristington.—Keynsham R.D.C. surveyor is preparing plans for houses.

Bromley.—T.C. sanctioned plans:—A. R. Mayston, rebuilding The Sawyer's Arms public-house, Bromley Common; W. J. Pamphilon, showroom, Market-sq.; R. J. Saunders, 14 houses, Gundulph-rd.

Canvey Island.—Essex C.C. recommend contribution of £2,500 towards construction of a bridge.

Carcroft (Adwick).—U.D.C. acquired site for new Council offices.

Cardiff.—City Council decided to build 250 small houses of non-parlour, 2-bedroom type at Ely.

Castleward.—Kirkheaton Estate Co., Ltd., who intend to build about 600 houses, have made application to R.D.C. for assistance in the shape of a loan towards erection of 160 houses at Walrig.

Chester.—T.C. resolved that it be recommended to Elementary Education Sub-Committee that, in order to provide more effective accommodation for pupils attending Cherry Grove Council school, the school be extended by (a) erection of practical instruction centre on new site, (b) conversion of present practical instruction centre into a class room or rooms for boys' department, and (c) erection of classroom or rooms for girls' department over present practical instruction centre.—Council also recommend that tenders be invited for erection of a roof over Mug Market in accordance with plan and specification prepared by City Surveyor, and application be made to M.H. for sanction to borrow the necessary moneys.

Chipping Norton.—R.D.C. are to erect another 12 houses at Charlbury.

Crott.—Housing Committee reported receipt of letter from M.H. sanctioning another 26 houses.

Ealing.—It is proposed to renovate Haven Green Baptist Church, at £7,000.

Eastwood.—Essex E.C. recommend £3,005 for additional classrooms at Council school.

Elstree.—Mr. Louis Blattner, Manchester, proposes to build large range of film-producing studios, laboratories, etc., with a hotel of 150 bedrooms, on an estate he has bought. Plans by Robert Atkinson, F.R.I.B.A., 36, Bedford-sq., W.C.1.

Enfield.—Licensing Justices agreed to plans for "The Goat" public-house on site at Forty Hill, for Truman, Hanbury & Buxton.

Evesham.—Licensing Justices approved plans by H. E. Dicks, architect, alterations to Oddfellows' Arms and structural alterations to Anchor Inn.

Ferring.—P.C. have asked East Preston R.D.C. for 6 additional houses.

Foleshill.—R.D.C. approved plans:—30 houses, Walsgrave-rd., Wyken, for A. White; men's room and transformer room to a 5-story mill, Little Heath Works, for Courtaulds, Ltd.; 2 classrooms Exhall Council school, for Warwickshire C.C.

Friern Barnet.—U.D.C. passed plans:—Garages at Nos. 1 and 11, Friern-lane, for F. W. Bristow.

Frimley.—It is proposed to dismantle Isolation Hospital and rebuild it as a pavilion on recreation ground.

Gillingham.—U.D.C. passed plans:—4 houses, Gordon-rd., submitted by L. C. H. Sills, on behalf of H. R. Richardson; 8 houses in Second-av., for C. J. Verrall; garage, Nelson-rd., submitted by Ruck & Smith, on behalf of Maidstone and District Omnibus Services, Ltd.; 3 shops and houses, at junction of Barnsole-rd., and Livingstone-rd., for C. E. Skinner.

Hampton.—M.W.B. recommend Board to convey to Hampton Launch Works, Ltd., freehold interest in an area of 7.64 acres of Platt's Ait, Hampton, including an area of about 2¼ acres already held by company.

Hampton-Grovett. — G.W.R. are considering scheme for railway station.

Harrogate.—With view to improving Station-sq., the corporation are acquiring a large site, including several shops, at £21,500.—A site for new fire station been bought for £6,100. The Central Library is also to be improved at £5,000.

Hinckley.—R.D.C. instructed architect to invite alternative tenders for 8 parlour houses and 8 non-parlour houses on Burbage (Lychgate-lane) site.

Huddersfield.—Site in central shopping area of Huddersfield, at junction of New-st., and High-st., will shortly be available for erection of 6 modern shops. Particulars from J. T. Spratt & Son, Ltd., East Parade, Huddersfield.

Hyde.—T.C. passed plans:—Re-building of "Bay Horse" Hotel, Victoria-st., Newton, for Bell & Co., Ltd.; 4 houses, Stockport-rd., Hyde, for Crompton Bros.

Ilford.—A site in Cranbrooke-rd., been acquired by Roman Catholic church for the building of a new church. Plans by H. B. Scott, L.R.I.B.A., 11-13, Finsbury-sq., E.C.2.

Isleworth.—Woodlands estate of 28½ acres is to be developed for residential purposes and about 200 houses are to be erected. Plans by P. Chase Gardener & Co., architects and surveyors, High-st., Hounslow.

Leeds.—Parishioners of St. Edmund's, Roundhay, Leeds, are raising funds for completion of church by building of Chancel. Plans by Carby Hall, F.R.I.B.A., Prudential-buildings, Park-row.

Leverstock Green.—Vicar held meeting to discuss scheme for provision of new school buildings for village.

Leyland.—Committee been formed for purpose of erecting a public war memorial. Plans by P. Howarth, 32, Loom-st., Preston.

London.—L.C.C. recommend £250,000 in respect of installation of sewage treatment plant at Northern outfall.

London (Battersea).—B.C. recommend that application be made to Electricity Commissioners for sanction to a loan of £54,000 in respect of electricity undertaking.

London (Bermondsey).—L.C.C. recommend borrowing by B.C. of £3,700 for housing purposes.

London (Camberwell).—B.C. passed plans for G. E. Dunnage, erection of range of lock-up garages at rear of "Alleyn's Head" P.H., Park-rd.

London (City).—Corporation recommend application on behalf of Trustees and Managers of the Stock Exchange for consent to extension of iron and glass shelter at Shorter's-court, Throgmorton-st., to provide additional telephone boxes. Also the same to Yetts, Sturdy & Usher, on behalf of Lovell & Christmas, Ltd., for permission to form a carriageway entrance at their new premises, Hosier-lane.

London (Fulham).—B.C. recommend drainage plans submitted by Rowe & Binns for the combined drainage of 37 terrace houses in Baron's Court-rd., Palliser-rd. and Barton-st.

London (Hackney).—B.C. passed plans:—H. Crawley, factory at rear of 43, Andrew's-rd.; W. H. Kelland & Son, garages on land at rear of the Orion Hall, East Bank; A. R. Cole, building, 5, Urswick-rd.; H.M. Office of Works, building, Paragon-rd., abutting on Valette-st.; Hobden & Porri, rebuilding of 92/100, Stoke Newington-rd., to abut upon Somerford-grove.

London (Islington).—B.C. recommend application to L.C.C. for sanction to loan of £9,864 for expenditure on Municipal Buildings.

London (St. Marylebone).—L.C.C. recommend borrowing by B.C. of £19,000 for a street improvement within borough.

London (Stoke Newington).—B.C. recommend £300 in repairing the roofs of destructor boiler house and tipping platform.

London (St. Pancras).—B.C. recommend that Superintending Architect of L.C.C. be informed that B.C. approve erection of proposed buildings on site at junction of Swain's-lane and West-hill, on conditions.

London (Wandsworth).—B.C. received M.H. sanction to E. Clarke & Sons' tender for erection of 18 self-contained flats on Park Dairy site, Southfields housing estate, and sanction from L.C.C. to the borrowing of £7,900 for erection.—Plans passed:—F. T. Wooding & Sons, 24 houses and 20 garages, Rosedene-av., Streatham; Kerven Bros., 5 houses, Deerhurst-rd., Streatham; A. Pascall & Sons, Ltd., alterations and addition to Stevens & Adams factory, Point Pleasant, Southfield; William Downs, Ltd., extension to South London Hospital for Women, Clapham Common South Side; Royal Arsenal Co-operative Society, Ltd., alterations and additions to 47-51, Balham High-rd.

London (Wandsworth).—L.C.C. recommend consent be given to erection by B.C. of house for park superintendent at King George's-park, Wandsworth.

London (Westminster).—City Council considering scheme for extension of conveniences at Wellington-st., and the Council recommend approval of engagement of G. J. Griffiths to prepare detailed plans and specifications, etc., for execution of proposed reconstruction works at Grosvenor Canal.—Plans passed:—J. D. Scott, re-erection of building and hood over front entrance door, 12, Medway-st. and 10 and 12, Arneway-st.; G. Vernon, building, over Metropolitan Railway at St. James's Park Station to abut upon Vandon-st. and Palmer-st.

Loughborough.—T.C. passed plans for new depot in Beeches-rd., for Shell-Mex, Ltd.

Loughton.—Another cinema is to be built.

Low-Moor.—Authorities of Raw-Nook Schools propose to go forward with a scheme of extensions, at £1,200.

Manchester.—Messrs. Pendleton & Dickinson are architects for new Synagogue in Higher Crumpsall.

Margate.—T.C. passed plans:—4 houses, Westbrook-av., E. S. O. Eeles; additional class-rooms and dormitory, "Shottendane house," Shottendane-rd., Reeve & Reeve; 16 houses, Waverley-rd., Westbrook, H. Goodban; 2 houses, Manston-rd., and 2 houses, Shottendane-rd., R. Noble.

Nelson.—T.C. passed plans for 12 houses in Briercres., for T. Dent & Sons.

Newton Abbot.—U.D.C. passed plans:—4 almshouses at Mary-st., Bovey Tracey, for Town Trust.

Northolt.—Licensing Justices approved plans for erection of "Swan" public-house at Fetts-lane, opposite Dobbs Hill-lane, Northolt. S. Fisher, A.R.I.B.A., architect.

Oldbury.—New Wesleyan church and Sunday schools is to be erected at Warley by Oldbury Wesleyan Circuit. Plans by Crouch, Butler & Savage, 67, New-st., Birmingham. The cost is estimated at £10,000.

Penmaenmawr.—U.D.C., subject to sanction of M.H., decided to secure Eden Hall, Penmaenmawr, for use as municipal buildings.

Penryn.—New infant welfare centre is to be erected in West-st.

Portslade.—U.D.C. are to erect 36 houses in Shelldale-rd.

Portsmouth.—T.C. passed plans:—Meakers, Ltd., re-building 175, Commercial-rd.; Portsmouth United Breweries, Ltd., public house, Cobden-av., and public house, Copnor-rd.; R. C. Brittan, 15 houses, Glenthorne-rd.; General W. Bramwell Booth, hall, Powerscourt-rd.; S. A. Evans, 10 houses, Bradingav.; H. Cook, 6 shops, Copnor-rd.

Reading.—South Berkshire Brewery Co., Ltd., decided to build public-house on site in Oxford-rd. Plans by F. E. Sainsbury, 154, Friar-st.

Redcar.—T.C. announced that M.T. had approved plans for concert pavilion on site of existing pierrot stand and was prepared to give formal sanction for loan as soon as Council accepted a tender for work.

Richmond (Surrey).—The B.E. prepared plans for 26 non-parlour houses on Manor-rd. housing site.

Sheffield.—Governors of Grammar School, Penistone, near Sheffield, are proposing to enlarge school premises. Plans by H. Wormald, A.R.I.B.A., West Riding C.A.

Shrewsbury.—T.C. approved erection of an additional 38 houses on Racecourse estate at £375 and £350 per house.

Stafford.—Benedictine Nuns at St. Benedict's Priory, Colwich, are proposing to commemorate the centenary by erection of a new church, which will cost approximately £7,000. Plans by J. Arnold Crush, F.R.I.B.A., architects, 37, York-rd., Edgbaston, Birmingham.

Stalybridge.—Stalybridge, Hyde, Mossley and Dukinfield Tramways Electricity Board are proposing to make extensions to the Hartshead Generating Station.—F. Robinson, Ltd., Unicorn Brewery, Stockport, are proposing to make improvements to Albion Hotel, Market-st.

Stanmore.—Lloyds Bank, Ltd., propose to build a branch bank to the plans of T. M. Wilson, F.R.I.B.A., 4, Staple Inn, Holborn, W.C.

Swindon T.C. instructed B.S. to prepare plans and specifications for erection of a further 100 houses at Hurst housing estate.

Tamworth.—R.D.C. passed plans of 82 houses which Tamworth T.C. propose to erect.

Tooting.—Work is shortly to commence upon erection of shops, etc., at junction of Lynwood-rd. and Deniton-rd., Upper Tooting. Perry & Perry, contractors.

Torquay.—T.C. passed plans:—6 houses, Enfield-rd., Babbacombe, for F. Maule; additional 7 bedrooms and 2 bathrooms, "Hotel Riviera," Park Hill-rd., for G. C. Ratcliff.

Walsall.—Corporation are to acquire site from L.M.S. for abattoir at £30,000.

Walthamstow.—For enlargement of County High School for Girls, Essex E.C. recommend £6,583.

Watchet.—Directors of G.W.R. authorised additional siding accommodation at Watchet.

Watford.—Purple Picture Palace (Watford), Ltd., 10, Coleman-st., E.C.2, has been formed with a capital of £50,000 to build a new cinema. Plans by Emden, Egan & Co., 7, Garrick-st., W.C.1.

Wembley.—Middlesex E.C. are erecting a new elementary school at Wembley at £16,000.

West Ham.—Plans been prepared by Mr. Watkins for provision of 2 isolation beds at Queen Mary's Hospital. Estimated cost £2,000.

Whitby.—U.D.C. is making application to the M.H. for sanction to borrow £30,000 for construction of a bathing pool and subsidiary works.

Witham.—Essex C.C. recommend £662 for widening railway bridge.

FIRES.

Acton.—Much valuable machinery was damaged beyond repair and premises covering an area of 6,000 yards were destroyed by a fire which has occurred in Southfield-road, South Acton. The damage was estimated at £50,000. Premises were in the occupation of Messrs. Watts, Fincham & Co., engineers.

*See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.	£	s.	d.
Best Stocks	4	5	6
Second Hard Stocks	3	19	6

Per 1,000. Delivered at London Goods Stations.	£	s.	d.		£	s.	d.
Flettons, at King's Cross	2	12	3	Best Blue Pressed Staffs	9	5	0
Do., grooved for Plaster	2	14	3	Do. Bullnose	9	15	0
Do., Bullnose	3	6	3	Blue Wire Cuts	7	5	0
Best Stourbridge Fire Brick :—							
2½ in.	8	11	0	3 in.	10	3	0
GLAZED BRICKS—							
Best White Ivory, and Salt Glazed Stretchers	21	0	0	D'ble Str'tch'rs	29	10	0
Headers	20	10	0	D'ble Headers	26	10	0
Quoins, Bullnose and 4½in. Flats	27	10	0	One Side and two Ends	30	10	0
				Two Sides and one End	31	10	0
				Splays and Squints	28	0	0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.
Delivered London.

	s.	d.		s.	d.
2 in. per yd. super.	1	11	3 in. per yd. super.	2	9
2½ in. „ „	2	4	4 in. „ „	3	6

	s.	d.	
Thames Ballast	10	6	per yd.
Pit Sand	13	9	„ „
Thames Sand	14	6	„ „
Best Washed Sand	14	6	„ „
½ in. Shingle for Ferro-Concrete	12	9	„ „
¼ in.	14	0	„ „
¼ in. Broken Brick	11	6	„ „
Pan Breeze	8	0	„ „

delivered 2 miles radius Paddington

Per ton delivered in London area in full van loads.

Best Portland Cement. British.
Standard Specification. Test £2 13 0 to £2 15 0 46s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0	10	0
Super Cement (Waterproof)	4	3	0
Roman Cement	8	15	0
Parian Cement	5	15	0
Keene's Cement, White	5	15	0
„ „ Pink	5	10	0
Plaster, Coarse, Pink	3	0	0
„ „ White	3	12	6
„ Fine	5	12	0
Sirapite, Coarse	3	9	0
„ Finish	3	17	0
Grey Stone Lime	2	10	9
Chalk Lime	2	10	9
Best Ground Blue Lias Lime	1	17	6
Hair per cwt.	2	2	6
Granite Chippings	1	12	0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.
Stourbridge Fireclay in s'cks 37s. (d. per ton at rly. dp.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube ..... s. 2, d. 10

BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station, per ft. cube 2 8
Delivered free on rail Nine Elms, S.R. per ft. cube 3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.

PORTLAND STONE.—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S.Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 4½
Do. do. delivered on road wagons at above stations, per ft. cube 4 5½
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE—

Delivered at any Goods Station, London.	s.	d.
Random blocks, from 10 ft. and over P. ft. cb.	17	0
Sawn two sides „	27	0
Sawn three or four sides „	32	0

YORK STONE, BLUE—*Robin Hood Quality.*
Delivered at any Goods Station, London.

6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super	5	6
6 in. rubbed two sides, ditto „	6	0
3 in. sawn two sides slabs (random sizes) „	2	3½
2 in. to 2½ in. sawn one side slabs (random sizes) „	1	6½
1½ in. to 2 in. ditto, ditto „	1	3½

HARD YORK—
Delivered at any Goods Station, London.

Scappled random blocks Per ft. cube	6	3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5	1½
6 in. rubbed two sides, ditto „	6	1½
4 in. sawn two sides slabs (random sizes) „	2	1½
3 in. ditto ditto „	2	10
2 in. self-faced random flags .. Per yd. super.	8	8

CAST STONE.

Delivered in London area in full-van loads, per ft. cube:—Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.			per stan.	Inches.			per stan.
4	× 11	.....	£30 0	3	× 6	.....	£21 0
4	× 9	.....	26 0	3	× 11	.....	25 0
4	× 8	.....	25 0	2	× 11	.....	26 0
4	× 7	.....	23 0	3	× 9	.....	24 0
3	× 8	.....	22 0	2½	× 9	.....	24 0
3	× 7	.....	22 0	3	× 4½	.....	21 0
2½	× 7	.....	21 0	3	× 4	.....	21 0

PLANED BOARDS.

1	× 11	.....	£30 0	1	× 9	.....	£28 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches.	per sq.
½	18/-	1¼	30/-
¾	21/-	1½	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.	Inches.	per sq.
1	24/-	¾	16/6
1¼	30/-	¾	19/-
1½	34/-	1	24/-

Ins. BATTENS.	s.	d.	SAWN LATHS.	s.	d.
¾ × 2 ....per 100 ft.	2	6	Per bundle	2	6

1" AND UP THICK.

	£	s.	d.	£	s.	d.
Dry Austrian Wainscot, per ft. cube	0	16	0	to 0	18	0
Dry American and/or Japanese Figured Oak, ft. cube	0	14	0	to 0	15	0
Dry American and/or Japanese Plain Oak, ft. cube	0	10	0	to 0	13	0
Dry sq. edged Honduras Mahogany, ft. cube	0	15	0	to 0	18	0
Dry Log cut Hondurus Mahogany, ft. cube	0	16	0	to 1	1	0
Dry Cuba Mahogany, ft. cube	1	1	0	to 1	10	0
Dry Teak, ft. cube	0	13	0	to 0	15	0
Dry American Whitewood, ft. cube	0	10	0	to 0	14	0
Best Scotch glue, per cwt.	4	10	0	to	—	
Liquid Glue, per cwt.	4	7	0	to 5	10	0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£	s.	d.		£	s.	d.
24 by 12	32	18	4	18 by 10	18	12	11
22 by 12	29	17	11	18 by 9	16	9	2
22 by 11	27	14	2	16 by 10	15	12	6
20 by 12	26	5	0	16 by 8	12	3	9
20 by 10	22	10	0				

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons.	Per 1,000 f.o.r. London.		
Best machine-made tiles from Broseley or Staffordshire district	5	7	6
ditto hand-made ditto	5	17	6
Ornamental ditto	6	2	6
Hip and valley tiles (per dozen) Hand-made	0	9	6
Hip and valley tiles (per dozen) Machine-made	0	9	0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£	s.	d.
R.S. Joists, cut and fitted	12	10	0
Plain Compound Girders	14	10	0
„ Stanchions	16	10	0
„ In Roof Work	19	10	0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£	s.	d.	Diameter.	£	s.	d.
½ in.	12	0	0	⅜ in. to ½ in.	10	15	0
¾ in.	11	0	0	⅝ in. to 2½ in.	10	10	0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Genuine Staffs. Iron.	Fittings. ½ in. and under.	Over ½ in.	Flanges. ½ in. and under.	Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water ..	63½	46½	37½	40	47½	50
Steam ..	60	42½	32½	35	42½	45
Galv. gas ..	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—HALF-ROUND GUTTERS—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. GUTTERS.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. „	2/0½	1/4½	2/1½
3 in. „	2/6	1/9	2/7½
3½ in. „	2/11½	2/0½	3/0½
4 in. „	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices ex Works

	Pipe.	Bends. stock angles.	Branches. stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. „	3 9	2 7½	3 7
3 in. „	4 6	2 10	4 2½
3½ in. „	4 11½	3 7	4 11½
4 in. „	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works

	Pipe, angles, stock angles.	Bends, stock Branches.
	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1 / 8 0½
4 in. „ „	6 2	5 8 / 10 0
5 in. „ „	7 2	10 10 / 17 1
6 in. „ „	8 6	13 2 / 21 9

Gasken for jointing, 38/6 per cwt.

	Per ton in London. £	s.	d.		£	s.	d.
IRON—							
Common bars	13	0	0	to	14	10	0
Staffordshire Crown Bars—Good merchant quality	14	5	0	to	15	15	0
Staffordshire Marked Bars	16	5	0	..	17	5	0
Mild Steel Bars	10	0	0	..	11	0	0
Steel Bars. Ferro-Concrete quality, basis price	10	0	0	..	11	0	0
Hoop iron, basis price	12	0	0	..	13	0	0
„ Galvanised	27	0	0	..	28	0	0
Soft Steel Sheets, Black—							
Ordinary sizes to 20 g.	13	5	0	..	14	5	0
„ „ „ 24 g.	14	5	0	..	15	5	0
„ „ „ 26 g.	16	5	0	..	17	5	0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g.	15	10	0	..	16	10	0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16	10	0	..	17	10	0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18	10	0	..	20	10	0
No. 1 quality £4 per ton extra.							
Flat and Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18	0	0	..	19	0	0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18	10	0	..	19	10	0
Ordinary sizes 6 ft. to 9 ft. to 26 g.	21	10	0	..	22	10	0
Sheets Galvanised Flat, Best quality—							
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22	0	0	..	23	0	0
Best Soft Steel Sheets, 22 g. and 24 g.	24	0	0	..	26	0	0
Best Soft Steel Sheets, 26 g.	25	10	0	..	26	10	0
Cut Nails, 3 in. to 6 in.	19	0	0	..			

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£	s.	d.
LEAD—Sheet, English, 4 lb. and up	28	10	0
Pipe in coils	29	0	0
Soil pipe	32	0	0
Compo Pipe	33	0	0

NOTE.—Countrydelivery, £0s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes. 5s. cwt. extra.

Oil lead, ex London area, at Mills per ton	18	15	0

COPPER.

	s.	d.
Seamless Copper tubes (basis) per lb.	1	1
Strong sheet „	1	0
Thin „	1	1
Copper nails „	2	3
Copper wire „	2	4

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz

CAPS AND SCREWS.

1¼ in.	1½ in	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps ..	33/-	41/	56/-	101/- per doz.
8 lbs. S. traps ..	35/-	45/-	66/-	126/- „

TIN.—English Ingots, 3/1 per lb. SOLDER.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

Raw Linseed Oil, in pipes per gallon	0	2	11
„ „ „ in barrels .. „	0	3	1
„ „ „ in drums .... „	0	3	3
Boiled „ „ in barrels .. „	0	3	3
„ „ „ in drums .... „	0	3	6
Turpentine in barrels .... „	0	3	10
„ in drums (10 galls). „	0	4	0
Genuine Ground English White Lead, per ton	47	5	0

(In not less than 5 cwt. casks.)

(*Continued on p.* 356.)

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J," Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	66	15	0
Red Lead, Dry (packages extra) ..	per ton	38	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Filicol	"	0	15	6
Size. XD quality	1kn.	0	3	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 " thirds ..	3½d.	32 " thirds	9½d.
21 " fourths ..	4d.	Obscured Sheet, 15 oz.	3½d.
21 " thirds	4½d.	" " 21 "	4½d.
26 " fourths ..	4½d.	Fluted 15oz.6½d., 21oz.	9d.
26 " thirds	6½d.	En'lied 15 oz.4½d..21oz.6½d.	

Extra price according to size and substance for squares cut from stock

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
7/32 Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cutras Black Enamel		0	7	0

The Concrete Year Book.*

This annual has been enlarged to no fewer than 554 pages, and is claimed to contain all the information of everyday use to all concerned with concrete, whether engineers, architects, builders, foremen, or clerks of works. In the handbook section notes are given on methods of making the strongest concrete with a minimum of cement, and methods of testing cement on the site are described. Then follows a series of chapters which include tables for the design of slabs for various spans and loadings; floor and roof loads; loads of walls and foundations; wind, earth and foundation pressures; sizes and reinforcement of footings for various pressures; loads carried by joist-concrete floors over different spans; sizes and reinforcement of beams to carry stated loads on varying spans; specifications for various types of floors and granolithic; specification for concrete roads, etc. A chapter of memoranda and a complete bibliography of books on concrete is included.

Then follows a complete directory of concrete and allied trades, classified under various headings and embracing every firm engaged in or catering for the concrete industry. A list of trade names is included. The final section is a catalogue, illustrating and describing the business or products of 250 firms engaged in the concrete industry.

* "The Concrete Year Book, 1928," Edited by Oscar Faber, O.B.E., D.Sc., M.Inst.C.E., and H. L. Childe. London: Concrete Publications, Ltd., 20, Dartmouth-street, S.W.1. Price 3s. 6d. net.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Linlithgow.—DEMOLITION.—The Linlithgow Town Council has decided to improve the amenity of the burgh by demolishing the old property, consisting of dwelling-houses, at the Brewery Housing Scheme.

Aberdeen.—SCHOOLS.—The Aberdeen Education Authority decided to erect in the Hilton district a primary school for 800 pupils and an intermediate school for 800 pupils.

Edinburgh.—SCHOOL.—Plans for the erection of new school buildings for Merchiston Castle School have been passed by the Edinburgh Dean of Guild Court. It is estimated that the cost of the new school to be built on the site of Colinton House and grounds for the accommodation of Merchiston Castle School will be £100,000.

Edinburgh.—CINEMA.—A company, under the name of the Playhouse (Edinburgh) Co., Ltd., has been registered with a nominal capital of £100,000. The new company, the promoters of which are Mr. F. A. Lumley and Mr. John P. Maguire, will erect a super cinema on a site now being excavated in Leith-street. The entire auditorium will seat more than 3,000 patrons.

Edinburgh. — HOUSING. — The Edinburgh Dean of Guild Court has approved the following plans:—Messrs. J. Hardie & Son—six bungalows at Hailes Gardens, Colinton; Mr. P. Macdonald—five bungalows at Traquair Park, Corstorphine; Mr. J. Robb—six flatted villas at Trinity-grove; and Mr. P. R. M'Laren—six garages at Fishwives-causeway.

Edinburgh.—HALL.—The Edinburgh Dean of Guild Court has granted warrant for the erection of a hall at Lochend, the new housing area of the city. It is being built by the United Free Church Presbytery, and will accommodate about 170 persons.

Hawick.—HOUSING.—The Hawick Town Council have decided to erect additional dwelling-houses at Thorterdykes. The Public Health Committee reported that the contractors were willing to carry out the additional scheme at the rates at present in force, so that the cost would be:—Two-roomed house, £327 9s. 3½d.; three-roomed house, £371 6s. 2d., exclusive of roads and division fences.

Musselburgh.—HOUSES.—The Town Council has accepted the tender of Mr. A. Morrison, of 26, High-street, Musselburgh, at £19,188, for the erection of 52 houses.

Roxburgh. — OFFICES. — Messrs. Reid & Forbes, of 7, Ainslie-place, Edinburgh, are the architects for the proposed new offices which are to be erected at Newton St. Boswell, for the Roxburgh Education Authority. Tenders are now being invited.

Barrhead.—HOUSES.—Tenders are being invited by the Town Council for the erection of 222 houses on the Arthurlie site.

Montrose.—BRIDGE.—Sir Owen Williams, London, designer of the proposed new ferro-concrete bridge over the river South Esk at Montrose to replace the present suspension one, has met the joint committee, consisting of Montrose Town Council and Forfar County Road Board, and explained the technical details from 12 drawings exhibited. The cost authorised under the Provisional Order is £70,000 for the bridge, £12,000 for the temporary bridge, and £8,000 for contingencies.

Glasgow. — TENEMENTS. — Acceptance of offers amounting to over £20,000 is recommended by the Housing Committee for the various works in connection with the erection of 60 tenement houses at Crossloan-road, Govan.—The Statute Labour Committee recommend for acceptance the tender of Messrs. John Porter and Sons, Ltd., amounting to £129,739 18s. 10d., for the construction of a sewer for the drainage of the Crookston and Cardonald district.

Obituary.

The death has occurred at 32, Thomson-street, Aberdeen, of Mr. James Ross, builder.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons',‡ Bricklayers'‡ Plasterers'.†
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge	1/8	1/9	1/8	1/8	1/8	—	1/6½	1/3½
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3
Dunfermline	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	‡1/2½ †1/3-1/3½
Edinburgh	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock	1/7½	1/7½	1/7	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3-1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/- to 1/2
Leith	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Motherwell	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	1/2½
Stirlingshire (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 350.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	,, ,,	7	0
Add if in floors 6 in. thick	,, ,,	3	3
Add if in beams	,, ,,	3	9
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	1	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	,, ,,	5	6
Do. roofs, floors and partitions	,, ,,	6	0
Do. trusses	,, ,,	8	6

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	,,	50	0
Do. to beams	per ft. sup.	1	0
Centre for arches	,,	1	6
Gutter boards and bearers	,,	1	0

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	,,	—	49/-	57/6	65/-
Do. matchings	,,	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	,, ,,	3	9

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	,,	2/5	2/8	2/11
Two-panel moulded both sides	,,	2/8	2/11	3/2
Four-panel Do. Do.	,,	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	,,	19	0
Do. stanchions	,,	21	9
In roof work	,,	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	,,	1/9	2/-	2/6	3/3
Rain-water pipes with ears	,,	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	,,	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	42	0
Do. Do. in flats	,,	41	0
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	,,	1/8	2/2	2/7	3/10	—	—
Do. soil	,,	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	,,	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	,,	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	,,	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	,,	—	—	—	14/7	19/6	—
Bib cocks and joints	,,	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	,,	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard. sup.	2	6
Do. Do. Sirapite	,, ,,	2	9
Do. Do. Keen's	,, ,,	4	0
Add saw lathing	,, ,,	1	7
Add metal lathing	,, ,,	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	,, ,,	1	0
Obscured sheet	,, ,,	1	1
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10½
¼-in. wired cast plate	,, ,,	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1¼ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PATENTS

APPLICATIONS PUBLISHED *

254,728.—G. Schlosser: Method of and device for conveying building materials.

257,243.—British Thomson-Houston Co., Ltd.: Coating compositions.

266,296.—Rutgerswerke-Akt.-Ges.: Wood preservatives.

269,203.—O. Lebeau: Metal-glazing frames for roofs.

272,163.—L. Forsen: Manufacture of hydraulic cements.

273,288.—Hess' Fabriker Aktieselskab C.M.: Hot-water heating systems or apparatus.

277,744.—W. Smith: Grabs and excavators.

277,288.—G. W. Christians: Means for sealing crevices in rock and like formations.

277,884.—J. W. E. Crosby: Moulds for forming blocks of artificial stone and concrete.

277,897.—A. Leyland: Building structures.

278,120.—F. L. Duffield: Manufacture of bricks, blocks and other articles from materials typifiable by dolomite.

278,150.—J. Anderson: Pipe connections.

278,176.—B. I. Hellyer and R. H. Hellyer: Lavatories.

278,194.—H. B. Toone and H. S. Toone: Interior wall-decorating materials.

278,195.—J. H. Francis and Comyn Ching & Co., Ltd.: Heating of rooms.

278,212.—C. H. Barton and H. Mayson: Slab and concrete walls.

278,216.—F. W. Margetts and W. H. Margetts: Tool for use in holding the parts together during the formation of soldered pipe joints.

278,229.—J. L. Musgrave and R. Crittall & Co., Ltd.: Heating and cooling of buildings.

278,291.—G. Hall: Pivot devices for windows, fanlights and rooflights.

278,294.—A. Klepp: Roofing tiles.

278,405.—S. de Lange: Process and apparatus for preparing a metallic coating for walls, ceilings, furniture, doors, window-sills, carriages.

278,408.—T. Shurmer: Apparatus for stair-trenching.

278,443.—F. Humphris: Joining or affixing perforated or expanded sheet-metal.

278,461.—E. M. Dome: Building bricks.

278,466.—Lightalloys, Ltd., and W. H. Grieve: All-metal framed window sashes or ventilators.

278,490.—H. Schäfer: Linings for mine and quarry shafts, tunnels, and the like made of bricks, moulded plates.

278,568.—F. Kent: Floor blocks.

278,589.—J. Kandera: Surface-treating machine for planing wooden blocks.

278,592.—A. E. E. Cuckow: Asbestos-cement tiles.

278,733.—J. R. Garrow: Preparation of organic materials or aggregates for use with cements.

278,801.—British Bead Printers, Ltd., and F. A. H. Heynert: Ornamentation of solid materials.

278,895.—A. W. Wylie: Attachment of pipe connections or fittings to tanks and cylinders.

278,829.—G. W. Mullins, G. Squiers, and H. O. Weller: Surfaces of roofs and walls of buildings and structures.

278,894.—E. C. R. Marks: Trimming-machines for clay blocks.

278,926.—J. Davies: Magnesium oxy-chloride compositions, coverings, or slabs for walls, floors and ceilings.

278,944.—Beacon Oil Co., B. P. Crittenden, A. C. Killinger, and H. L. Bolton: Excavating-devices.

278,961.—E. E. Martienssen: Drainage system for tennis courts.

278,983.—H. L. Bates: Artificial marble.

278,989.—T. W. Taylor: Domestic hot-water supply systems.

278,995.—W. E. Lemaitre: Hoisting-grabs.

* All these applications are now in the stage in which opposition to the grant of patents upon them may be made.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

- ***** Denotes *accepted*.
- **†** Denotes *provisionally accepted*.
- **‡** Denotes *recommended for acceptance*.
- **§** Denotes *accepted subject to modifications*.

Aberhill (Fife).—Additions to Aberhill school, for the Fife E.C. Mr. G. Sandilands, Education Offices, Kirkcaldy:—

Joiner—	
*D. Dewar, Methil	£1,303 12 9
Plumber—	
*Nicol & Sons, Buckhaven	422 18 7
Painter—	
*T. M'Farlane, Methil	148 2 4
Heating—	
*J. L. Saunders & Co., Glasgow	292 4 9
Slater—	
*J. Lawson & Son, Kirkcaldy	263 15 2

Arbroath.—Extending waste weir, reconstruction of apron to overflow channel and the extension of overflow steps in reinforced concrete at Glenogil reservoir, for the T.C. Mr. Thos. A. Hogg, Burgh Engineer. Quantities by the Burgh Engineer:—

Ramsay & Gordon, Arbroath.
John McGilwray & Co., Glasgow.
John Carnegie & Son, Ltd., Dundee.
C. Dick & Son, Monifieth.
*William Tawse, Ltd., Aberdeen.
Alex. Adamson, Laurencekirk.
James Ritchie, Dunfermline.
Clark & Chapman, Aberdeen.
Yorkshire Hermebique Co., Dundee.
John Pirie, Ltd., Edinburgh.

Acton.—52 houses, with roads and sewers, at Acton, for the Great Western (London) Garden Village Society, Ltd.:—

A. J. Rossiter, Caerphilly	£29,000
Rowley Bros., Ltd., Tottenham	29,072
J. Laing & Son, Ltd., Mill Hill, London	28,336
Building & Public Works Construction Co., Ltd., Swindon	28,230
R. Mansell, Croydon	24,772
Perrys (Ealing), Ltd., London	27,474
A. C. Dean, High Wycombe	23,763
F. G. Cressy, Ltd., London	26,594
Streek & Co., Ltd., London	27,001
*Rhys J. Rees & Co., Ltd., Pontypridd	26,284

Barnsley.—Church of St. Helen at Hoyland Nether, near Barnsley, for Rev. J. Grogan. Messrs. Empsall, Clarkson & Clarke, architects, Permanent-chambers, Pierce Hall-yard, Bradford:—

*J. Horkins & Sons, Liversedge.

Batley.—30 houses on the housing estate, off Bradford-road, for the T.C. Mr. H. L. Hall, Borough Engineer and Surveyor, Brunswick-street:—

Mason and Bricklayer—
*G. W. Aveyan, Batley (30 houses).
Carpenters and Joiners—
*J. Brooke & Sons, Batley Carr (16 houses).
*J. Richardson & Sons, Batley (14 houses).
Plumber—
*F. A. Hardy, Morley (30 houses).
Plasterer—
*G. Crossley & Son, Birstall (30 houses).
Slater—
*J. M. Thornton's Sons, Heckmondwike (30 houses).
Electricians—
*Hepworth & Englain, Batley (16 houses).
*W. Smith, Batley (14 houses).

ESTIMATING ON RIGHT LINES

Everyone whose business it is to quote for building work should master the principles upon which estimating is based. These principles are clearly explained and illustrated in

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Publishers, 94 High Holborn, London, W.C.

Bolton.—Alterations to the interior of the mental block at the Fishpool Institution, Farnworth. Mr. John Wood, architect, 24, Mawdesley-street:—

*E. Taylor & Co., Ltd., Bolton.

Bedford.—New brick and tile works, railway sidings, etc., for the directors of Eastwood's Fletons, Ltd. Messrs. Horace Boot & Partners, consulting engineers, 7, Victoria-street, S.W.1.:—

*G. Percy Trentham, Ltd., Birmingham.

Bradford.—Installation of electric lighting at Bierley Hall Sanatorium, for the T.C.:—

*Cassé & Walker	£315

Brighton.—For the demolition of 78, 79, 80, 81, 82 and 83, Grand Parade and 1 and 2, Pavilion Parade, for the C.B.:—

Demolition Excavation (Greenham), Ltd.	£699 15
B. Thomas	613 0
*H. Pannett	601 6

Brighton.—Alterations for improving the lavatory accommodation for both sexes at the West Street Shelter Hall, for the C.B.:—

Saunders's	£5,467
Field & Cox, Ltd.	5,325
J. Barnes & Sons	5,217
*Borough Surveyor	4,920

Buxton.—Extensions to the College, for the Derbyshire E.C. Mr. G. H. Widdows, F.R.I.B.A., architect, St. Mary's-gate, Derby:—

*J. Beckett, Mansfield.

Chatteris.—16 non-parlour type houses in Doddington-road, for the U.D.C. Mr. Solden Hipwell, architect, 19, New-road:—

	Per pair.
H. G. Papworth, March	£809 0 0
J. R. Prior, Sutton	767 8 10
Barrett & Goakes, Chatteris	759 0 0
T. J. Jupp, Wisbech	754 0 0
J. W. Barber, Stanground	720 0 0
Jeffs & Bigley, Letchworth	699 10 0
B. Lofts & Son, Littleport	697 0 0
J. H. Johnson & Son, Wisbech	673 13 0
P. Taylor, Sutton	665 9 0
C. P. Unwin, Ecclesfield	654 0 0
Bristow & Melton, Chatteris	653 0 0
Wm. Canham, Somersham	629 10 0
†A. Pettitt, Ramsey	600 0 0

Edinburgh.—Convenience and shelter at Granton-square, Granton, for the T.C. Mr. Wm. A. Macartney, Borough Engineer, Edinburgh. Quantities by Messrs. Morham & Brotchie, 29, Hanover-street, Edinburgh:—

Topping & Co., Edinburgh.
Elder & Wilson, Edinburgh.
*Wm. Finlayson & Sons, Leith £773

Flint.—38 houses, for the U.D.C. Mr. W. B. Edwards, A.R.I.B.A., architect, Flint, North Wales:—

*Powell & Hughes, Acrefair, near Wrexham.

Hayes.—50 houses, for the Great Western (London) Garden Village Society, Ltd.:—

A. J. Rossiter, Caerphilly	£28,540 0
Rowley Bros., Ltd., Tottenham	26,600 0
H. T. Brisley, London	25,906 0
J. Laing & Son, Mill Hill, London	24,732 0
R. Mansell, Croydon, Surrey	24,608 0
James & Woodworth, Cardiff	23,592 0
F. G. Cressy, Ltd., London	23,408 0
A. C. Dean, High Wycombe	23,350 15
Streek & Co., Ltd., London	23,293 10
Building & Public Works Construction Co., Ltd., Swindon	22,996 0
Rhys J. Rees & Co., Ltd., Treforest, Pontypridd	22,948 0
*Perrys (Ealing), Ltd., London	22,200 0
Friend & Bradshaw, Newcastle-on-Tyne	21,480 0

Welwyn.—Erection of Welwyn Garden City Pear-tree school, for the Hertfordshire C.C. County Surveyor, Hatfield:—

F. Palmer, Welwyn	£15,300 0 0
G. L. Thurgood & Son, Ltd., Hadham	14,866 0 0
G. W. Blow, Welwyn	14,253 6 1
F. Hitch & Co., Ware	13,620 0 0
W. S. Try, Cowley, Uxbridge	13,404 10 0
A. Clark, Bishops Stortford	13,282 5 8
W. E. Greenwood & Sons, Ltd., Harlesden	13,010 0 9
Kidman & Sons, Cambridge	12,996 0 0
Perry's (Ealing), Ltd., Ealing	12,918 1 5
E. D. Winn & Co., Ltd., London	12,916 0 0
G. Henson & Son, Ltd., Wellingborough	12,815 0 0
Jesse Mead, Ltd., Chesham	12,790 0 0
J. Willmott & Son, Ltd., Hitchin	12,720 0 0
J. L. A. White, Letchworth	12,718 5 10
R. Ginn & Son, Ltd., Hertford	12,712 0 0
F. R. Hipperson, London	12,700 0 0
H. C. Janes, Luton	12,648 0 0
J. L. Glasscock & Sons, Bishops Stortford	12,496 0 0
S. E. Moss, Southend-on-Sea	12,492 0 0
H. J. & A. Wright, Ltd., Gt. Missenden	12,429 0 0
Limpus & Son, Kingston-on-Thames	12,384 0 0
W. H. Shrouder, Stevenage	12,283 5 9
Pettengell & Clark, Hitchin	12,128 8 0
W. F. Bailey, Hitchin	12,092 16 9
W. O. Porter, Ware	11,993 17 0
Welwyn Builders, Ltd., Welwyn G.C.	11,843 0 0
*A. Carter, Luton	11,750 0 0

Hinckley.—Additions to the public baths, for the U.D.C. Mr. J. S. Featherston, engineer and surveyor:—

Hall & Son	£1,061	17	8
Chaplin	986	0	0
Farmer & Ginns	970	0	0
Watkin & Son	938	0	0
A. S. Russell	907	0	0
A. Newborough	890	10	0
Bloxham & Goadby	865	0	0
A. Jeffcote	804	9	11
Greaves Bros.	804	3	0
*Geo. Greaves	780	0	9

(All of Hinckley.)

Hull.—Engine-house at the Dunswell Waterworks, for the Corporation Water Committee:—

*W. Birch & Son, York	£8,243

Kendal.—100 houses in skating rink field site, for the T.C. Mr. F. W. Oxberry, Borough Surveyor:—

*Pius A. Baines & Son, Preston.

Kilrenny.—12 houses, for the T.C. Mr. A. D. Haxton, architect, 3, High-street, Leven:—

Builder—
*Robert Terras, jnr., East Wemyss.
Joiner—
*James Fisher, Methil.
Plumbers—
*A. Wilson & Son, Upper Largo.
Plasterer and Slater—
*A. Morris, East Wemyss.
Painter—
*H. Bowman, Anstruther.
Glaziers—
*John Haxton & Co., Kirkcaldy.
Fencing Contractor—
*George Henderson, Windygates.

Larne.—Supplying and laying 187 lineal yards of 3-in. cast-iron water pipes with necessary hydrants, fountains, valves, etc., and for other repair work at storage tank in connection with the Glenarm water supply, for the R.D.C. Mr. S. Robinson, surveyor, Victoria-rd.:—

John Ross & Sons, Belfast	£417
Allan McNeill, Larne	335
*George Thompson, Larne	309

London.—Cottages for the British Legion. Messrs. A. Lloyd Thomas & Douglas Wood, joint architects, 35, Craven-street, W.C.2:—

	Each.
Bromyard, Herefordshire (2 houses)—	
*W. James, Bromyard	£440 17 6
Felixstowe, Suffolk (6 houses)—	
*Rogers Bros., Felixstowe	527 0 0
Knutsford (2 houses)—	
*F. Warburton & Sons, Warrington	510 0 0
Huntingdon (2 houses)—	
*M. J. Allen & Sons	520 0 0
Monmouth (2 houses)—	
*Rowland & Donald	471 15 0
Eston, Yorks (4 houses)—	
*Moody & Garnett	475 0 0
Kettering (12 houses)—	
*Phillips & Slow	489 13 4
Prudhoe, Northumberland (4 houses)—	
*J. Smith, Prudhoe	520 15 0
Maryport (2 houses)—	
*Contractors (Maryport), Ltd.	513 17 9
Dunstable (10 houses)—	
*W. Summerfield & Son	487 10 0
Stroud, Gloucester (2 houses)—	
*Rowland & Donald, Cinderford	513 0 0
Chingford (12 houses)—	
*Chappell & Co.	534 0 0
Crookham, Hants (4 houses)—	
*F. M. Liming	505 0 0
Sedgeberrow (2 houses)—	
*Wheeler & Mansell	481 17 6
Birmingham (2 houses)—	
*B. S. White	543 0 0
Preston Hall, Kent (4 houses)—	
*Preston Hall Industries	500 0 0

London.—Formation of a new cemetery at Gunnersbury, including construction of the lodge, entrances, boundary walls, fences, etc., for the Kensington B.C. Mr. Knapp-Fisher, architect:—

*Leslie & Co., Ltd., Kensington	£4,745

London.—Alterations and additions to existing buildings at the property acquired in Georgiana-street necessary for their conversion for the meter department, for the St. Pancras B.C.:—

Walter G. Bridgman & Son, Ltd.	£2,929	0	0
H. & J. Chamberlaine	2,750	0	0
Veitch & Close	2.690	0	0
C. Rodwell & Sons	2.687	3	1
Whitbys, Ltd.	2.642	0	0
Marchant, Hirst & Co.	2,639	0	0
Clark Bros.	2.573	0	0
Franks & Simons	2.516	0	0
W. H. Wagstaff & Sons	2.375	0	0
R. Dixon & Sons	2.341	0	0
S. Shaw	2.320	0	0
Wm. Griffiths, Sons & Cromwell, Ltd.	2.300	0	0
Lole & Co.	2.267	0	0
G. Eaglen & Son	2,257	10	0
W. Walkendine, Ltd.	2.144	0	0
J. W. Buckingham & Sons	2.135	0	0
Stevens & Sons	2.123	0	0
G. Coe	2.060	0	0
Fairweather & Ranger	2,020	0	0
*Arundel, Ltd.	1.931	5	0

London.—Large warehouse in Upper Thames street and Three Cranes-lane, E.C.4, for Messrs. Major & Field, Ltd. Messrs. Gunton & Gunton, architects, Empire House, St. Martin's-le-Grand, E.C.2:—

*Gee, Walker & Slater, Ltd., London.

London.—Provision of low-pressure hot-water apparatus at the Brecknock school, for the L.C.C.:—

Fretwell Heating Co.	£1.824
J. Jeffreys & Co., Ltd.	1,689
Wm. Freer	1,665
Beaven & Sons, Ltd.	1,653
W. G. Cannon & Sons, Ltd.	1,645
J. T. Meredith & Co., Ltd.	1,645
Clark, Hunt & Co., Ltd.	1,597
*The National Heating Co., Ltd.	1,455

Architect's estimate, £1,660.
(All of London.)

London.—Tenders accepted for January by H.M. Office of Works.—Building works: Acton, branch post office and sorting office—Alterations: W. E. Greenwood & Son, Ltd., London, N.W. Steelwork: T. C. Jones, Ltd., London, W. Ashford post office and telephone exchange—Alterations: Elmore & Son, Maidstone. Asphalte damp-course work: Engert & Rolfe, Ltd., London, E. Addiscombe telephone exchange—Artificial stonework: Brooks, Ltd. (Halifax), Halifax. Bearstead (Maidstone) automatic telephone exchange—Erection: Whiting Bros., Faversham. Birmingham P.O. stores depot—Steelwork: Walker, Bros., Ltd., Walsall. Birkenhead employment exchange—Slating work: E. Parkinson (London), Ltd., London, N. Camden Town employment exchange—Steelwork: Redpath, Brown & Co., Ltd., London, E.C. Crewe post office and telephone exchange—Alterations: Cooper Bros., Macclesfield. East Croydon sorting office—Plastering work: W. C. Greenslade & Co., Croydon. Elswick-on-Tyne employment exchange—Adaptations: W. B. Cooper & Sons, Ltd., Sunderland. Greenwich, Maze Hill telephone exchange—Alterations and additions: H. Lacey & Sons, Luton. Steelwork: Redpath, Brown & Co., Ltd., London, E.C. Grimsby Victoria Chapel employment exchange—Painter work: Butler & Jewitt, Grimsby. Plumbing work: F. Oakes, Grimsby. Joinery work: T. Winney, Grimsby. Godalming telephone exchange—Steelwork: Redpath, Brown & Co., Ltd., London, E.C. Grenwich, fuel research station—Formation of new roadway: H. Woodham & Sons, Ltd., London, S.E. Hackney post office and telephone exchange—Steelwork: E. Wood & Co., Ltd., Manchester. Hendon vaccine station—Reconstruction of roadway: Hiram Morecroft, London, W. Idle, Bradford, telephone exchange—Alterations, etc.: A. Higginbotham & Sons, Idle, Bradford. Plasterer work: The Leeds Fibrous Plaster Co., Idle, Bradford. Joinery work: J. W. Barker, Idle, Bradford. Mason and Concretor work: Wm. Garnett & Co., Thackley, Yorks. King's Cross telephone exchange—Steelwork: Dunlop & Ranken, Ltd., Leeds. Norbury post office and telephone exchange—Artificial stonework, precast steps, granolithic paving work: Stuarts Granolithic Co., Ltd., London, W.C. Norwich head post office—French polisher: J. Spalding, Norwich. Porlock, Somerset—Erection of coastguard cottages: E. A. W. Poole & Son, Bristol. Science Museum, Kensington—New roof to gallery: Galbraith Bros., Ltd., London, S.E. Science Museum, Kensington (II Section)—Steelwork: Redpath, Brown & Co., Ltd., London, E.C. Southbourne telephone exchange—Steelwork: A. D. Dawnay & Son, London, S.W. Artificial stonework: The Stroncrete Mnfg. Co., Bournemouth. Southampton post office district manager's office—Alterations: A. E. Jukes & Son, Ltd., Southampton. Shepherd's Bush telephone exchange—Precast concrete, artificial stonework and granolithic work: J. Brooke, Ltd., London, S.W. Iron drain, soil and vent pipes: Burn Bros., Ltd., London, S.E. Asphalte work: London Asphalte Co., Ltd., London, E.C. Portland and hard York stonework: Albion Stoneworks, London, S.W. Stockton Heath telephone exchange—Staircase work: Warburton & Son, Stockton Heath. Painter work: F. Haslam, Stockton Heath. Plumber work: C. W. Davenport & Son, Stockton Heath. Plasterer work: J. B. Johnson & Co., Warrington. Thames Ditton telephone exchange—Oak cleft pale fencing work: T. W. Palmer & Co., London, S.W. Engineering Services.—Ulster Parliament Buildings, Stormont—Fire and domestic cold water services: D. Thomson & Sons, Ltd., Carlisle.

London.—Tenders accepted for January by H.M. War Office:—Building, etc.: Woolwich, Royal Arsenal, glazing roof lights: H. Hope & Sons, Ltd., Smethwick. North London, artificers' works: J. B. Edwards & Co., London. Dover, Citadel Barracks, dining-room, etc.: F. R. Hipperson, London. Warley, internal painting: Schofield, Son & Crees, Wivenhoe. Colchester, Goojerat Barracks, vehicle shed: A. E. Flory & Co., Colchester. Feltham, R.A.S.C. M.T. Depot, coal yard and wood store: Roads & Public Works, Ltd., London. Hilsea, "C" type married soldier's quarter and R.E. office: Cortis & Hankins, Drayton, Hants. Aldershot, Wellington Lines, Cavalry Barracks, alteration to stable and vehicle sheds: T. H. Jones, Farnborough. Aldershot (South), Waterloo Barracks, married soldiers' quarters, sanitary annexes: Tribe & Robinson, Ltd., Guildford.

Long Marston.—Reconstruction of the Sun Inn, for Messrs. S. Smiths, Ltd., Old Brewery, Tadcaster. Mr. W. Broadbent, architect, East Parade, Leeds:—

*Wm. Tune, Ltd., Osgodby.

Looe.—Extension of Church End conveniences at East Looe, for the U.D.C. Mr. G. H. Ivory, surveyor:—

*Whale & Hickey, East Looe	£578

Manchester.—Additions to the works of Messrs. F. Walters & Co. Mr. F. C. Lyon, architect, 44, Churchill-street:—

*G. & W. Smith, Manchester.

Manchester.—Shop, office, dairy and stables at Lloyd-road, Levenshulme, for Messrs. F. Dobson & Sons, 3, Clare-road. Messrs. J. H. Maybury and Sons, architects, 19, Chapel-walk, Manchester:—

*T. Campion & Sons, Ardwick, Manchester.
Steelwork—
*J. Webb & Sons, Ltd., Bury.

Maxwell.—Houses on the Portland site, for the T.C.:—

Mason Work—
*R. K. Brown.
Joiner Work—
*Lockerbie & Waugh.
Slater Work—
*S. Creasey, jun.
Plumber Work—
*P. & P. Meechan.
Plaster Work—
*T. Robertson & Son.
Painter Work—
*W. Reid & Son.

Pinner.—New Primary school, at Pinner, for the Middlesex C.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect:—

J. C. Rackham, Harrow Weald	£14,920
W. Dorey & Co., Ltd., Brentford	14,110
W. Lawrence & Son, Ltd., London	13,976
C. Miskin & Sons, Ltd., St. Albans	13,972
H. Knight & Son, Tottenham	13,916
W. Moss & Sons, Ltd., Cricklewood	13,374
Leslie & Co., Ltd., Kensington	13,306
C. J. Newby & Bros., Southgate	13,223
A. & B. Hanson, Ltd., Southall	13,214
A. Monk, Edmonton	13,176
G. Godson & Sons, Ltd., Kilburn	13,127
Y. J. Lovell & Son, Gerrard's Cross	12,845
‡W. S. Try, Cowley	12,735

Rochdale.—20 houses, on Victoria-place area, for the C.B. Mr. S. H. Morgan, Borough Surveyor:—

*W. H. Ashworth & Son, Ltd., Rochdale.

Rochester.—Erection, drainage and site works, etc., of 75 houses, for the Corporation. Mr. William Law, City Surveyor:—

*R. Mansell, Croydon	£26,997

Romford, Essex.—Rebuilding of (a) the "Bull" public house, Market-place, and (b) "The Unicorn" public house, Hare-street, for Messrs. Ind, Coope & Co., brewers, Burton-on-Trent:—

*(a) H. E. Jerram, London.
*(b) Thos. Lowe & Sons, Burton-on-Trent.

Sale.—44 houses on Hulme-road. Mr. E. Bleakley, Borough Surveyor:—

*F. E. Gill & Sons, Manchester.

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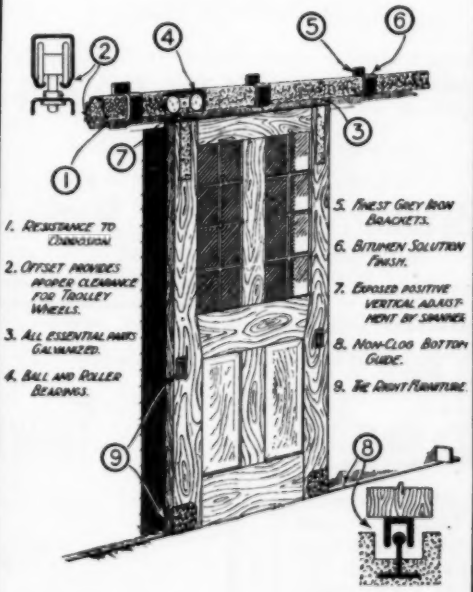
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Tamworth.—50 non-parlour type houses and construction of about 400 yards of roadway, consisting of tarmacadam carriage-way and paths, grass verges, kerbing, etc., and about 1,100 feet of 9 in. and 6 in. stoneware sewers, together with manholes, gullies, etc., for the T.C. Mr. A. O. Marshall, Borough Engineer and Surveyor:—

Houses—
*S. Johnson, Hucknall ..... £360 each

Roads, etc.—
*S. Johnson £1,968 19 0

Taunton.—Pavilion on the golf course, for the T.C.:—

*Maddock, Son & Sharpe, Taunton £597 15

Taunton.—Swimming bath, slipper baths and a miniature pool for children in St. James'-street, for the T.C.:—

*F. & E. Small, Taunton £9,987

Thornaby.—New Council centra l school at Thornaby-on-Tees, for the North Riding E.C.:—

*C. Hebditch, Loftus £12,549 3 1

Twickenham.—3 shops with flats above in York-street, Mr. W. H. Hamlyn, A.R.I.B.A., architect, 43, Vernon-road, East Sheen, Surrey:—

*F. G. Cressy, Ltd., Chiswick.

Uxbridge.—Alterations and additions to the existing dining-room at the Union Institution, Hillingdon, near Uxbridge, for the Guardians. Mr. Hubert F. Bateman, architect and surveyor, Warwick-road, West Drayton:—

J. W. Buckingham & Sons, 269, Willesden-lane, N.W.2	£1,400 0 0
J. Markham, 5, Cowley-road, Uxbridge	1,380 0 0
John P. Gordon, 414, Manor-gardens, W.3	1,309 18 0
Y. J. Lovell & Sons, Gerrards Cross, Bucks	1,289 0 0
A. C. Dean, High Wycombe	1,170 0 0
†E. A. Collins, Ledgers-road, Slough	925 0 0
Architect's estimate	1,247 13 1

Ventnor.—Supply of materials and driving of Greenheart pile on east side of landing stage at Royal Victoria Pier, and for painting of pier superstructure, for the U.D.C. Surveyor:—

W. G. Beaumont & Son, London	£326 0
Sadler & Co., Cosham	298 10
*H. Bishop & Son, Newport, I.W.	257 0

Walton.—Repairs to the five coal bunkers at the Board's works at Walton, for the M.W.B.:—

Fram (London), Ltd.	£4,622 11
Burnand & Pickett, Ltd.	2,950 0
A. N. Jefferyes & Co.	2,650 0
J. W. Francis Crewdson	1,840 0
The Cement-Gun Co. (Great Britain), Ltd.	1,709 5
*The Francois Cementation Co., Ltd.	892 7

Warrington.—Mortuary adjoining Mr. Baguley's smithy, Stockton Heath:—

*A. Medlock, Stockton Heath.

Warrington.—Parochial hall facing Ellesmere-road, for the Church Council. Messrs. W. & Segar Owen, F.R.I.B.A., architects, Palmyra-square:—

*A. Swinton, Warrington.

Warrington.—78 houses on the Corporation's Bewsey estate. Mr. A. M. Ker, Borough Surveyor:—

*C. J. Doyle, Liverpool.

Warwick.—Structural alterations, concrete floors, drainage, etc., necessary for the conversion of saw mill, Campion-terrace, Leamington, into a garage, for the R.D.C. Mr. S. F. Taylor, engineer and surveyor, 35, Oxford-street, Leamington:—

*Exors. of R. P. Sathercole, Leamington £384

Whitby.—Alterations and additions to the Spa Theatre, including the construction of a balcony for the U.D.C. Mr. J. R. Seward, Engineer and Surveyor:—

*F. W. Plaxton, Scarborough.

Worsborough.—Alterations to Hay Green-lane, Birdwell, Borough Surveyor:—

*S. Taylor, Worsborough.

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